Final Report TP 6007E

Shared Vehicle Fleet Concepts

Implementation Sites
and
Institutional Issues

Prepared for:

Transportation Development Centre
Transport Canada

Prepared June 1985 by:

uko A. Parviainen & Associates

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SHARED VEHICLE FLEET CONCEPTS

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Jouko A. Parviainen
Jouko A. Parviainen & Associates

DISCLAIMER

The contents of this report reflect the views of the contractor and not necessarily the official views of the Transportation Development Centre of Transport Canada.

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17. Abstract

The report contains a summary of visits to five Shared Vehicle Fleet (SVF) implementation sites in U.S.A., U.K. and Sweden. It is evident that a variety of enterprise structures can be viable - as long as the site is carefully selected and the operation tightly controlled. Each scheme offers a chance for a modest profit - allowing for the possibility of non-subsidized operation. While some resource conservation trends appear to be emerging, the true impacts of any of the SVF schemes are yet to be established. The extent of reduction - in a Canadian context - in number of personally owned vehicles, in annual distance travelled and in fuel consumption can only be determined through a carefully monitored demonstration project.

All visited schemes have opted for verbal/telephone reservation systems, manual vehicle/office log books for record keeping and vehicle use monitoring. For accounting ease, manually collected data is later fed into a micro-computer, which in one scheme automatically generates billings. Opportunities exist for demonstrating automated applications based on personal smart cards (pre-clearance of credit for each use) and on vehicle monitoring devices - to support responsive and reliable operation by only one staff member in each shift.

A transportation club type residential application operated by an independent broker, relying on established garages for all maintenance (and possibly for fuel), would overcome most regulatory impediments. Pre-screening of member applicant driving records by the insurance carrier, careful background credit checks and a vehicle dealer licence - to facilitate purchase/sale of used vehicles at auctions - would provide for the most cost-effective operation.

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17. Resumé

Ce rapport rend compte d'une mission d'observation qui a mené l'auteur dans trois pays (Etats-Unis, Royaume Uni et Suède), afin d'y étudier le fonctionnement de cinq parcs de véhicules de covoiturage. La première conclusion qui s'impose est que la réussite d'une entreprise de covoiturage n'est pas liée nécessairement à la structure d'entreprise adoptée, mais plutôt au choix judicieux de la clientèle à desservir et à un contrôle serré de l'exploitation. Chacun des modes d'organisation étudiés peut dégager un profit modeste, tout juste suffisant pour permettre la survie de l'entreprise sans recours aux subventions. Au vu des premiers résultats, il semblerait que la formule puisse avoir un impact positif sur l'économie de ressources, mais l'impact réel de ses différentes variantes reste à établir. La seule façon de connaître l'étendue des économies possibles en contexte canadien - réduction du nombre de voitures privées, du kilométrage annuel parcouru, de la consommation d'essence, etc. - est de lancer un projet pilote soigneusement étudié et contrôlé permettant d'établir un bilan comparatif de la situation avant et après le lancement de l'entreprise. Toutes les entreprises visitées ont opté pour un système de réservation par téléphone et la tenue manuelle des registres comptables et d'utilisation des véhicules; pour faciliter leur comptabilité générale, toutes les données recueillies manuellement sont par la suite traitées par micro-ordinateur qui, dans l'une d'entre elles, assure la facturation automatique de la clientèle. L'occasion serait belle d'expérimenter un système d'exploitation automatisée faisant appel aux cartes de crédit à mémoire (qui permettent la vérification automatique du crédit disponible) et aux appareils embarqués de saisie des données d'exploitation et de régulation du parc qui autorisent un service fiable et à la demande nécessitant un seul régulateur par poste.

Quant aux restrictions imposées par la réglementation actuelle concernant les transports routiers, il y a moyen de les contourner pour la plupart en optant pour la formule coopérative de transport privé prise en charge par un courtier indépendant. En vue d'assurer, voire maximiser, la rentabilité de l'entreprise, celui-ci a intérêt à se munir d'un permis de vendeur d'automobiles (pour faciliter les achats de véhicules et leur vente éventuelle aux enchères) et à repousser les demandes d'adhésion dont l'étude a révélé une mauvaise cote de crédit/solvabilité ou encore d'assurabilité.

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SUMMARY

This report presents the results of the study "SHARED VEHICLE FLEET CONCEPTS - Implementation Sites and Institutional Issues".

'Shared vehicle fleets' (SVF) are considered - for the purposes of this report - to include all jointly owned, managed or accessed fleets of vehicles designed to complement or replace vehicles owned by households and individuals. Conventional rental/leased fleets, car/van/bus pools or transit are not included.

The report contains a summary of visits to the implementation sites - in U.S.A., U.K. and Sweden - of five shared vehicle fleets. The schemes were chosen to represent a variety of locational settings and user clientele, administrative structures and operating approaches. For each site, brief comments are made concerning:

* definition
* location
* transportation service
* administrative structure
* membership composition and size
* fleet composition and size
* garaging & maintenance
* operation: service, records and pricing
* current status.

A transportation club type residential application operated by an independent broker, which relies on established garages for all maintenance (and possibly for fuel), would overcome most regulatory impediments. The incorporated enterprise should also be registered as a motor vehicle dealership with a licence restricted to purchasing and selling at the vehicle auctions on behalf of the SVF club only. The enterprise should own and register the entire fleet of vehicles, and should maintain direct control to ensure responsive day-to-day management of the operation.

In order to secure competitive insurance rates the enterprise would probably have to allow pre-screening, by the insurance carrier, of each membership applicant's driving

record. Some 'non-qualified' applicants might still be able to join, but would have to be charged with higher short term rental rates to cover the insurance differential. Membership should probably be restricted to residents of the complex. The enterprise would also need to demonstrate a very serious approach to risk management - by pre-screening each applicant's driving record and by requiring the signing of a legal contract to clearly define any specific restrictions in the use of the vehicles. Careful background credit checks, possibly combined with a security deposit (earning interest to the member), would be essential to prevent non-payment problems.

All visited schemes have opted for in-person or telephone reservation system, and manual vehicle/office log books for vehicle use monitoring and record keeping. For accounting ease, manually collected data is later fed (in three schemes) into a micro-computer, which automatically generates billings. Significant opportunities exist for demonstrating computer-based, automated applications driven by personal 'smart cards' (which allow pre-clearance of credit for each use) and by key-in type vehicle use monitoring devices. Such technology application would make it possible to reliably and responsively operate a sizeable fleet (of perhaps 50-70 vehicles) with only one full time employee in each shift. This level of efficiency may ultimately be necessary to guarantee rates that would make an SVF attractive to the average consumer.

What fleet composition will be most desirable, is going to depend on the socio-economic characteristics and current fleet mix at the intended enterprise site. A survey of the current use patterns and the (SVF) expectations of the residents can prevent expensive reshuffling of the fleet mix later. The issue of whether to purchase new or used vehicles for the shared vehicle fleet, has not been resolved by any of the schemes visited during this study. Indeed, the exact enterprise/user economics and marketing considerations are likely to be quite different for a Canadian demonstration. For a 'typical' site, a mix of the two is likely to be the most cost-effective composition - especially if recreational and other specialty vehicles are to be included. Recent difficulties (by Rent-a-Wreck) in finding good quality used cars would also suggest the desirability of a mixed fleet - at least for large scale, multiple-site SVF enterprises.

During the visits it became evident that many different enterprise structures *can* be viable - as long as the implementation site is most carefully selected and the operation is tightly controlled. Another critical factor seems to be - at least with these unique, first experiments - the enthusiasm and personal attention provided by the entrepreneur. These systems are clearly sufficiently out-of-the-ordinary, and their success so dependent on a very complex set of economic and human behaviour factors, that they will require a combination of business savvy and tender loving care to reach their fullest potential. Any 'preferential' treatment that may be accorded by the developer of the residential complex, a major oil company, an innovative insurance carrier, municipal government (in zoning), or the federal and provincial tax departments, should be welcomed with open arms - but without designing the enterprise operation to be contingent upon those privileges in the longer term.

The STAR system has demonstrated most clearly how important it is to recognize potential problems early on. In the operation of any SVF enterprise, these can include:

1) credit problems - failing to perform an adequate background check on membership applicants

2) maintenance - purchasing cars which are too 'worn out' and very difficult/expensive to overhaul for reliable operation
   - slipping in periodic maintenance

3) garaging - failing to locate sufficiently close to all households in a complex

4) day-to-day management - failing or being unlucky in selecting a field manager for the operation (resulting in excessive requirements on the owner's time)

5) rental rates - setting the initial rental rates and introductory membership fees unrealistically low - which will then make subsequent catch-up increases doubly difficult

6) off-peak utilization - failing to market off-peak utilization or locating so that back up (business rental) customers are not available

All these potential problem areas are, however, manageable. Other sites have had better success in some areas, and STAR itself was operating on a modest profit for 3 months before the demonstration was closed. In fact, with each scheme, there appears to be a chance for a modest profit - just sufficient to make continued non-subsidized operation a possibility. The current status of the visited schemes is that three are stabilized or slowly growing (VivallaBil, Sambil,Greencar), one was discontinued earlier than originally planned (STAR), and one is going to close in accordance with its demonstration schedule (Mobility Enterprise).

It does seem likely - based on the Phase I review of the socio-economic and transportation issues and the SVF schemes, and based on the Phase II site visits - that this new 'mode' of transportation will become more popular in the future. Its expansion will be driven by some powerful economic, accessibility and convenience considerations. Once correct target markets have been identified - and the product carefully designed to match the operating circumstances - SVF enterprises, with a variety of organizational and operating structures, will emerge to enrich the more conventional transportation scene. The report outlines a 5-step program for demonstrating the feasibility of these operations in Canada.

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1. INTRODUCTION

1.1 Background

In response to rising transportation costs and due to the tightening resource constraints, a variety of shared vehicle fleet (SVF) concepts have been recently developed to:

1. provide better matching of vehicle attributes to specific trip requirements;
2. facilitate a net reduction in the level of total car ownership; and still
3. retain much of personal transportation freedom.

Note: For commonly used SVF terminology, see Exhibit 1. SVF are considered - for the purposes of this report - to include all jointly owned, managed or accessed fleets of vehicles designed to complement or replace vehicles owned by households and individuals.

The reduction in use, and ownership, of typical 'compromise' vehicles - which tend to be too large for a vast majority of trips - will result in significant increase in transportation energy (and money) efficiency. Households can be relieved from purchasing, garaging, insuring and maintaining seldom used excess vehicle capacity (Ref.1/p.5). These concepts are highly complementary to other conservation measures, ie. regular car/van/bus pooling and the use of public transit. They increase the range of transportation alternatives from which households and individuals can select the most cost-effective 'package' of mobility to best meet their specific travel needs.

In a carefully designed SVF enterprise, these benefits can be substantial enough to offset the disbenefits of:

* possible delays in access to a vehicle;

Exhibit 1

SHARED VEHICLE FLEET CONCEPTS

- Related Terminology -

* Shared Vehicle Fleets
* Shared Car (or Automobile) Fleets
* Shared Car Ownership
* Multiple Shared Car Ownership
* Vehicle Sharing Schemes
* Multi-User Vehicle Systems
* Public Automobile Systems
* Publicars
* Licensed Car Co-operative Society
* Neighbourhood Cars (or Co-operatives)
* Mobility Enterprise
* Community Transport Centre
* Motor Pools
* Pooled Access Cars
* Self-Drive Taxi
* Car Rental Concepts
* Short Term Auto Rental (STAR)
* Group-Shared Car Rental
* Paratransit (joint ownership)
* Car/Van/Bus Pools (joint ownership)

* need for advanced activity/trip planning and the requirement of keeping reservation commitments;

* required signing of binding legal agreements;

* cost of managing the SVF operation; and

* losing the status of personally owning two cars.

A recently completed state-of-the-art review has indicated four important developments in shared vehicle fleet experiments:

* past experiments in using shared vehicle fleets as central business district circulation systems, such as Procotip in Montpellier and Witkar in Amsterdam, have met with clear failure;

* a gradual shift has started toward relatively small scale residential co-operatives managed by transportation brokers, and toward other previously untested innovative schemes;

* the recent renewed interest has resulted in important major demonstrations, particularly in Sweden and the United States; and

* development of distance/time driven charge units operated by magnetic I.D. cards, and of related vehicle monitoring and reservation systems, is underway (in U.K and the U.S.).

Based on the review of recent socio-economic and travel trends, there appears to be significant theoretical opportunity for implementing shared vehicle fleet schemes in Canada also, mainly due to:

* the economic pressures on households and individuals to reduce the transportation component of their budgets;

* the significant time/space flexibilities in discretionary travel, and the increased flexibilities in all travel, resulting from the expected alternative work schedule and communications developments; and

- the increasing proportion of households - resulting from their reduced size and the increased number of elderly - which could get adequately by with one or no personally owned vehicle.

1.2 Rationale

It is important to recognize that - while these opportunities appear significant - they are, at this point, only theoretical. Because of the immense complexity of predicting consumer choices in this intricate attitude/behaviour vs. cost savings trade-off environment (for which no time series data exists), only the implementation of a carefully designed demonstration program can establish the true propensity of Canadian households to join, and to continue to participate, in shared vehicle fleet enterprises.

The ultimate success of an enterprise will heavily depend on its specifications. Careful selection of the site (which in part controls the possible membership composition) and fleet composition, and the definition of suitable operating rules are all of critical importance in securing the success of an enterprise. A well controlled reservation system and an equitable basis for setting user charges are equally important in setting up an enterprise.

These factors, and their influence on the success or failure of recent experiments, will be reviewed during the visits to the demonstration sites.

1.3 Objectives

The objectives of this research project are to:

- undertake a detailed review of the most important current shared vehicle fleet projects; and

- review institutional issues and develop criteria for a Canadian demonstration project.

2. IMPLEMENTATION SITES

2.1 VivallaBil - Örebro, Sweden

Definition: Car Co-operative

Location

The VivallaBil enterprise is operated in Örebro, which is located 190 km west of Stockholm and 295 km northeast of Göteborg. The city has a population of 100 000, with another 17 000 in nearby communities - or about 43% of the province and 1.4% of Sweden. The population density is 64 persons per square kilometre, or 1611 prs/km^2 considering only built up areas. (for a map, see Appendix C/Item 3).

The enterprise site, a cooperative residential development called Vivalla, was the first low density development available only for renting in Sweden. It was completed in 1971, and had a population of 7000 (now reduced to 5500). There is a small shopping centre in the middle of the community, and two planned industrial sites adjacent to the community. The typical household incomes are slightly below Sweden's middle income level.

Transportation Service

There is excellent road access from Vivalla to Örebro's central business district, 4 km away, as well as to Stockholm and Göteborg via the European freeways E3 and E18 which pass the community just south of it.

The number of parking spaces provided at surface lots near each group of row houses is roughly double what the car ownership (of 1200-1500) would indicate.

There is an end-of-the-line bus stop in the middle of the community at the shopping centre. Service, available during days, evenings and weekends, runs directly to the CBD and connects with all main bus lines along a downtown street.

Administrative Structure

The Vivalla community cooperative administers the shared vehicle fleet. It leases the vehicles from a commercial leasing company with an option to buy out at any time - below market price, due to an excellent amortization rate.

The Hyrbil concept was introduced to the community with a special marketing blitz. Following prepublicity presented by a community newspaper, several makes of vehicles were put on display at the central shopping centre as the alternatives for the fleet. A well known (automotive) celebrity was present summarizing technical aspects of each make of vehicle to the audience. A lady from the tennants association, whom everybody knew, was organizing the event. A local radio station was participating. Those who filled a visitor's form participated automatically in a small lottery (price = a free three month transit pass). Two prime questions were asked: which car ought to be acquired by the cooperative, and would you be interested in becoming a member.

Official opening for VivallaBil was 19 May 1983.

Membership

There are currently 39 member households, with a total of 50 drivers.

No age restrictions have been set - other than the 18, which is earliest for getting a driver's licence. Despite the fact that the accident record of those under 23 is quite bad in Sweden, the insurance company did not insist on an age restriction - it was considered too troublesome to enforce.

The drivers' accident and defraction records were not checked. The cooperative and the project staff did not want to appear suspicious in the eyes of a close knitt community.

No full credit check was performed - however, the rent payment records were confidentially verified through the cooperative's records.

Residence at Vivalla community is not a requirement. Due to the physical layout of that part of the city, however, outside membership is not convenient to most.

Fleet Composition

The fleet consists of 4 brand new 5-door Opel Cadets. The selection criteria included:

- preferences expressed by visitors to the pre-enterprise vehicle show
- careful life cycle costing (worked out by Kjell Dahlstrom and the municipal planning staff)
- practicality factors: a child's pram had to fit in through the fifth door without disassembly, etc.

The lease cost is 1000 Kr/month + 1250 Kr/month for full maintenance.

A cooperative insurance company has given VivallaBil a 60% discount bonus off regular rates - which is excellent compared to typical short term car insurance rates. Roughly 85% of drivers in Sweden are getting the maximum good driver bonus of 70%.

The concept includes no MAV/GAV distinction (minimum attribute vehicle vs. general attribute vehicle). The cooperative did not have up-to-date statistics on the current personal vehicle ownership of the members.

Garaging & Maintenance

The vehicles are kept in an indoor garage under the shopping centre in the middle of the community minimizing access distance to members. The most convenient parking slots next to the entry door opposite to the maintenance office are reserved for the VivallaBil fleet. The office of the cooperative gas station also doubles as a small automotive products and convenience store. Fuel pumps and maintenance bays are on the other side of the store.

The low head room, neon lighted underground facility is considered a depressing working environment. Planned additions to the shopping centre are likely to include skylights for the maintenance/store area in the garage.

Operation

VivallaBil is operated by 7 volunteers from the cooperative. The cooperative has provided a small office space (in addition to the parking & records), but home phone numbers are also used.

Membership fee of 1000 Kr, which has to be paid in 10 monthly installments of 100 Kr, is fully refundable when resigning from the hyrbil system (provided no outstanding charges remain). In addition, 50 Kr/month were collected towards a joint fund to purchase winter tires with studs.

The shared vehicle scheme operates on a non-profit basis. Rental charges, which include both distance and time (based on a vehicle log book), are presented in Exhibit 2:

Exhibit 2

VIVALLABIL RENTAL CHARGES

* Basecharge which includes 4h and 20km = 25 Kr

* Distance charge when < 100km = 11 Kr/10km
> 100km = 10 Kr/10km

Mon-Fri 7.00-17.00 = 8 Kr/10km

* Time charge when 4h- 8h = 10 Kr
8h-24h = 30 Kr
> 24h = 5 Kr/4h

* Special rates (no distance charge)
first 24h = 220 Kr
second 24h = 130 Kr
subsequent 24h = 125 Kr

There are no specific rules concerning the usage of the rented vehicles - except that one vehicle has been designated off-limits to all pets and smoking.

Comments

The cooperative community, Vivalla, publishes a periodic newsletter - which has given generous coverage to the hyrbil system since its inception. It desribed the concept of renting cars through a transportation club for short term use, participated in the preopening marketing blitz, and reported on subsequent developments.

Weekday rentals have been always sluggish. This probably is a natural outcome from the lifestyle in that community and the excellent bus access to major shopping and service sector developments in the city's downtown. The cooperative is considering renting the vehicles during day time on weekdays to businesses in the adjacent industrial development to increase the utilization rates.

Data collection and analysis is undertaken only occasionally - by the Örebro Kommun in co-operation with Lund University.

VivallaBil is an established car co-operative enterprise - which has stabilized and is slowly growing. It is just barely braking even, having taken ownership of the previously leased vehicles. Increased weekday utilization rates will enable the enterprise to become fully self-sustaining.

Sample materials for VivallaBil are included in Appendix C.

2.2 Sambil - Västerås, Sweden

Definition : Private Car-Hire Club

Location

The Sambil system is operated in Västerås, which is located 115 km west of Stockholm, 95 km east of Örebro, along the north shore of Västeråsfjarden. The city and its environs have a population of 118 000, and a population density of 123 prs/km^2 - or 2010 prs/km^2 considering only built up areas. The city has four major industrial sites, one next to the CBD, and one each in the north, east and west. (for a map, see Appendix D/Item 2).

The Sambil system includes the entire city, ie. its membership is sprinkled throughout the city.

Transportation Service

The city has an excellent balanced road network consisting of E18, radial arterials and a partial ringroad. Bus service blankets the city during weekdays, with a basic radial skeleton being operated in the evenings and on weekends.

The city has more bicycle paths than any other city in Sweden - simply a most impressive network (Appendix D).

Administrative Structure

An independent non-profit organization, Västerås SAMBIL Användare, coordinates the operation of the shared vehicle scheme. Voluntary staff keeps a list of member car-owning and non-car-owning households, which is mailed to the entire membership with a periodic newsbulletin. There is a formal structure for guiding the operation: chair group (4), marketing group (2), matching group (4), contract group (2), and one designated contact person in each (of 5) communities.

The concept for the Västerås Sambil Användare was developed in 1978 by a small working group, with an official inauguration on 3 January 1980. Initial operation, eg. reserving a Post Office Box and the marketing activities, were aided by an 80 000 Kr grant from the Swedish Transportation Research Bureau (grant ended in 1982).

An attempt to advertise in one community organization's newspaper failed miserably - out of 900 readers only one came to discuss the plan. However, a paid article in a provincial newspaper (circ. 43 000) was quite successful: 200 responses were received. Only 10% responded to the following mail out survey, 60% to subsequent telephone follow-up interview. Articles and radio interviews were found to be important in boosting the interest in the very new scheme of sharing vehicles.

Membership

There are currently 98 member households, of which 2/5 are car owners and 3/5 non car owners (=renters). There has been little change in the number since 1981 when Sambil grew from 10 to 100 members.

Several of the owners are single person householders - but as a whole, the member households are of average type. One notable exception: a 7 person household renting to another 7 person household. Seventy percent of the renters have owned cars before.

The average incomes of both car owning and non car owning households within Sambil are slightly higher than corresponding averages in Sweden.

There are no official age restrictions in the scheme - however, some car owning households have applied restrictions by specifying which members of the renter's household may drive their vehicle.

There has been no systematic effort to check anybody's vehicle accident and defraction records, or their credit records (a deposit has adequately taken care of the non-payment possibilities).

Fleet Composition

The vehicle types owned by the member households are almost typical, somewhat lighter than the average in Sweden: 60% of cars are <1000 kg vs. 43% for Sweden. The average age of the cars is 6-7 years - exactly the same as the national average.

Garaging & Maintenance

The vehicles are garaged at the residence of the owners - or, during longer rentals, at the residence (or cottage) of the renters. The maintenance is the responsibility of the owners. Contract has specific provisions for sudden maintenance required during a rental.

Operation

The day-to-day operation of the system is handled by the members themselves: each owner/renter pair arranges its own schedule and requirements. The system is quite flexible and informal: usually, if the car is at owner's home, the renter can go and pick it up for use until again required by the owner. For longer durations, weekends and vacations, the use is negotiated well in advance to prevent conflicts.

Most members have contracts with only one member - making up an owner/renter pair. However, several have signed contracts with 2 or 3 counterparts in order to increase the utilization rate of their vehicle or increase the chance of getting a vehicle on a short notice. Some pairs have periods of 'inactivity', but seem to keep contracts enforce until becoming active again.

The annual distance driven by the owners is less than average - and therefore complements well the occasional use of their vehicles by the renters. The amount of driving by the renters, when they (70%) used to own or have full time access to a car, had been about average. Nobody rents to commute, even though there have been such applicants. Sambil has not undertaken an actual survey of trip patterns due to lack of funding. However, the results of such a survey are considered potentially invaluable for further marketing of Sambil in Västerås, or for introducing similar schemes in other municipalities.

The current membership fee of 25 Kr/a has been found too low to sustain even the volunteer based operation of Sambil. It will be increased. There is also a 150 Kr/a fee used to set up an insurance fund (75% of members belong). This is used to cover the cost of lost bonuses in the case of an accident.

The rental rates are negotiated between the owner and the renter. Sambil staff attends these negotiations armed with typical vehicle operating statistics. The variable costs are obtained from motorists' organizations, and the fixed costs are those paid by the owner (for insurance, garaging etc). The third party presence at the rate negotiations is considered critical for a smooth start of the owner/renter relationship: the owner doesn't want to appear greedy and the renter doesn't want to appear too cheep.

Rates charged are based on these two cost components, and are applied based on distance only (recorded in a vehicle log book). The 5 page standard Sambil contract does have other provisions, and many are considering including some kind of time charge - or at least a take out fee to compensate for the trouble of making the car available. The contract also specifies:

- who is allowed to drive
- what records are to be kept
- method of payment & deposit
- responsibilities in case of an accident
- responsibilities for regular and periodic maintenance

Comments

Västerås Sambil Användare is, in the context of the Nordic countries, at the same time:

- a brand new scheme - perhaps 'threatening' with its insurance and personal hygiene implications; and
- an age old, well tested scheme - as horses have been loaned out for centuries to assist neighbours who did not own any.

While the success of the scheme was originally heavily dependent on the enthusiasm and savvy of its innovators, it now has developed its own steady momentum sustained by the economic realities of car ownership in Sweden. The rentals significantly help offset the fixed costs of owning an automobile, making its use more pleasurable to the owner. For the renter, the system offers access to a personal vehicle when required, without the burdens of ownership or the exorbitant rates of the regular vehicle rental companies. The experiences of both the owners and the renters have been very good with few minor exceptions.

In its transportation planning approach the City of Västerås has shown great deal of innovation - and a shared vehicle scheme such as Sambil fits well into that environment.

No data collection or analysis has been carried out since the original research support ceased. However, the club does maintain an up-to-date record of active members and would be in a position to initiate data collection on usage patterns very quickly.

Västerås Sambil Användare is firmly established as a private car-hire club operating without any subsidy. The usage rates, however, appear to have slightly declined from their peak two years earlier.

Sample materials for Sambil are included in Appendix D.

2.3 Greencar - Oxford, U.K.

Definition : Joint Ownership of Vehicles

Location

There are roughly a dozen active green car schemes operating in the U.K. (summarized in Appendix H) - in addition to perhaps hundreds of private car sharing arrangements not identified by the operators as 'green cars' or not located by the survey. One of the 'official' green car schemes operates in Oxford - a historic city with a university dating back to 1214 which includes some 35 colleges and a dozen associated institutions. (for a map, see Appendix E/Item 4).

Transportation Service

The city which has a fairly extensive one way street system in the downtown, is provided with a bus network with frequent service. The intercity bus and rail services may be considered excellent.

Administrative Structure

The operation of the 'Harmony Van Co-operative' is administered jointly by the members - with one member having assumed the coordinator's, another the treasurer's role. The group meets officially twice a year: once in January (to consider the previous year's operation), and once more during the year.

Membership

Four households with a total of 11 people are members in this green car scheme. The heads of the households are: two college lecturers, secretary of a motor dealership and one bookstore owner/salesperson. Two households, who in the past were members, have resigned from the scheme without any major problems in adjusting the arrangements amongst the others.

Fleet Composition

The shared vehicle is a 9 year old/100 000 km VW camper van. The age of the vehicle is noteworthy - as in many U.K. green car schemes, a vehicle rather old compared to North American standards is kept alive, on the road and even shared.

Garaging & Maintenance

One member's place of work, the bookshop, is used as the focal point - where the vehicle is kept when not parked at a member's residence or when not out on the road. Apart from minor tune-up maintenance, all work is undertaken at local garages when required.

Operation

A record of the reservations, which have to be made 48h in advance, are kept on a calendar at the bookshop. No booking can exceed 8 days without prior consultation with the group. There are also some unofficial rules (understandings) about how often the van can be booked by the same member for weekends (ie. no more than twice per month), etc. There have been no problems in deciding who is going to have the vehicle when.

The rental charges, which are calculated on the basis of distance travelled only (no time element - yet, anyway), include tax, insurance, maintenance and repairs, gasoline and amortization of the original purchase price. The scheme is fully self-financing. In addition to keeping a vehicle log, receipts are kept for everything. One member developed a computer program which is used to summarize the manually collected data to show the cost and use of the vehicle each month.

The vehicle is being used for approximately 10 600km each year (largely accumulated during vacation travel by each member). Typical uses include: visits to relatives, trip to a conference, lecture tour, participation in a demonstration, setting up a book fair, etc. Due to the characteristic and layout of the municipality (everything within easy reach by bicycle or bus), nobody uses the vehicle for strictly commuting.

Comments

One problem, which the using of old vehicles tends to particularly magnify, involves some very difficult maintenance decisions - ie. when to stop attempting to keep the vehicle on the road. To pass judgement on this, the members (all with varying understandings of vehicle maintenance) will have to not only agree on the current expenditure but agree on when the next major repair is likely to hit them. Their views may also differ significantly depending on their actual and perceived needs (overall use & desired vehicle attributes) or on who owned the vehicle originally (if one of the members) etc.

The Harmony Van Co-operative, as do nearly all green car enterprises, keeps records of distance travelled by members in a vehicle log-book and tabulates these monthly. Some vehicle usage data is available also for all the other 'official' greencar schemes (contained in a three year old survey) - however, it has not yet been processed or analyzed due to lack of funds. No additional data collection is under way.

In the case of the Harmony Van Co-operative, changing residences have made the operation somewhat more cumbersome. Previously 2 households used to live in the west, 2 in the east - now the 4 households are spread entirely around the city. There is more hassle now to get the van - and as a result, at least one household is considering resigning from the scheme and setting up a co-operative with other, closer-by households. But the scheme is fully self-sustaining, and will simply multiply should one member branch out.

Sample materials for the Greencar are included in Appendix E.

2.4 Mobility Enterprise - West Lafayette, U.S.A.

Definition : SVF & Micro Vehicle Demonstration

Location

The Mobility Enterprise experiment is being operated at the Purdue University in West Lafayette, Indiana. West Lafayette is a small university town of rougly 22000 people - adjacent to Lafayette, a city of 45000. It is located in the Wabash River valley - 103 km northwest of Indianapolis, and 190 km south of Chicago along Interstate #65.

Transportation Service

Regular transit service runs at 15min frequency during peaks and at 30min during off-peaks - from 6am until 11pm. On weekends, the service runs at 30min-1h intervals (commuter routes are discontinued). There are 4-5 buses daily to the airport as well as Greyhound&Trailways buses and twice daily Amtrak service to both Indianapolis and Chicago.

Administrative Structure

The Mobility Enterprise experiment is being managed by staff from the Automotive Transportation Center of the Purdue University as a non-profit university experiment.

Membership

The membership was restricted to Purdue faculty and staff to allow registration of the vehicles through the Purdue Research Foundation and use of Purdue's insurance carrier.

Seven 1-1.5 hour focus group interviews (total of 62 individuals) were held in March 1982 to ascertain the likely acceptance of a mobility enterprise type scheme and to allow refinements to the experimental concept design. A summary of the findings is presented in Exhibit 3.

Exhibit 3

MAJOR FINDINGS FROM FOCUS GROUP INTERVIEWS

Vehicle Ownership

* Increasing costs are creating compromises over style - ie. when purchasing a vehicle people feel they are settling for "less" car than they had planned to buy.

* There was an overwhelming attitude that automobiles are synonomous with personal mobility and freedom.

Vehicle Ownership Expenses

* All groups knew owning a car was expensive - but when probed, were relatively unaware of the actual cost.

* There was a strong feeling that government or industry would not allow the ownership costs to get too high. Virtually all groups felt that some breakthrough in technology would occur, which would keep cars affordable.

Micro Automobiles

* Price (quoted as between $3000-4000) makes a micro car very attractive as a second vehicle.

* Safety was dismissed as a realistic issue. Interviewees generally perceived drivers to be more important than automobiles with respect to safety and even went so far as to say "All cars are unsafe".

Mobility Enterprise

* Generally, the shared fleet portion was not well received. Most groups felt it was an infringement on their freedom of mobility, and many tended to dwell on negative aspects of sharing.

* Continuous maintenance was almost universally seen as the major point in the Mobility Enterprise's favour.

* The ability to get a membership for a trial period was seen as crucial.

Source: Mobility Enterprise - One Year Later (Table 2)
M.J. Doherty & F.T. Sparrow / Purdue University
TRB Annual Meeting, 17-21 January 1983.

A random sample of 250 faculty/staff households was conducted by mail: 52 indicated interest - 32 participated in an organizational meeting in July 82. The presentation and question/aswer periods covered:

* overall objectives
* real cost of automobile ownership
* comparative costs of mobility enterprise vs. personal ownership
* fleet composition
* operating rules of the enterprise.

From this group, 26 households participated in a mini/micro vehicle test drive and a trip diary phase. The travel data was used to estimate the expected needs for shared vehicles.

In September, a telephone interview survey (of 300 randomly selected local households) indicated that 20% would be willing to try mobility enterprise and that 10% would be willing to join.

A national survey - by J.D. Powers & Associates and National Family Opinion, Inc. - of 3000 representative U.S. households (of approximately 5000 individuals) measured the potential acceptance of mobility enterprise type systems. The results are summarized in Exhibit 4 for interested/non-interested households. Price expectations of the interviewees are presented in Exhibit 5. In this survey it was found that the prime factors favourably affecting preference for mobility enterprise type schemes were:

- age = younger
- education = more educated
- current primary vehicle = smaller or less expensive
  = an import
  = purchased used
- next purchase = used

Exhibit 4

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND CAR USE BEHAVIOUR

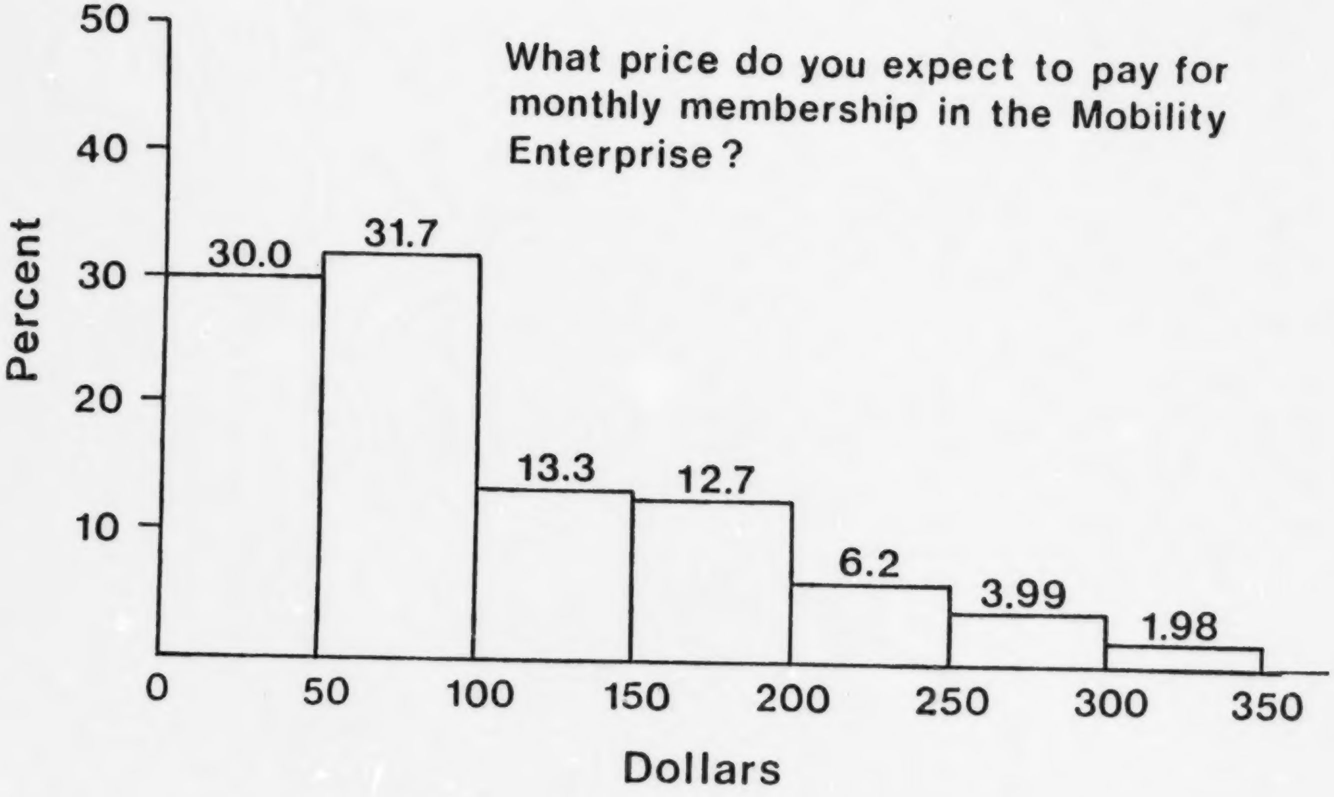
- Interested and Non-interested Respondents -

	TOTAL	INTERESTED	NON-INTERESTED
N	4776	410	3884
Median Age (yr)	45.6	36.2	46.37
Median Education (yr)	13.37	14.26	13.36
% Male Respondents	44.2	47.1	44.0
Estimated Median Household Income	20480.	20211.	20480.
% Who Had Rented a Vehicle for a Non-Business Purpose	19.4	27.1	18.7
% Purchasing a Vehicle in Next 12 Months	23.1	34.0	18.7
% Who Had Ever Loaned a Vehicle	18.1	30.9	16.7

Source:
The Appeal of Mobility Enterprise Concept : Final Results from a National Survey
R.K. Whitford & M.J. Doherty & N. Wright
Automotive Transportation Center, Purdue University; July 1984.

Exhibit 5

PRICE EXPECTATIONS FOR MOBILITY ENTERPRISE



Source: The Appeal of Mobility Enterprise Concept: Final Results
from a National Survey (Figure 2)
R.K. Whitford & M.J. Doherty & N. Wright
Automotive Transportation Center, Purdue University; July 1984.

The operation began with the:

- first member group of 7 households on 22 January 1983
- second member group of 5 households on 15 July 1983.

The two groups were combined mid-1984. Current membership is 14 households - with approximately 31 authorized drivers (2.2 per household).

Fleet Composition

The original concept called for using the Minimum Attribute Vehicle (MAV) - ie. the micro vehicle - as each household's first vehicle. The household's current vehicle, or one of the SVF vehicles, was to become the General Attribute Vehicle (GAV). In fact, most households use their micro vehicles primarily as their second or third vehicle.

Each household was given either a Daihatsu Cuore (5 in total) or a Suzuki Alto (9). There were also 2 micros available for staff and as exchange during maintenance.

The shared fleet consisted of:

- 1 vehicle (82 Caprice Classic): 1 Feb 83 - 10 Jul 83
- 2 additional vehicles (83 Mercury Gran Marquis & Colony Wagon): since 10 July 83.

This SVF has since been downsized - and consists now of only 2 vehicles: Mercury Topaz Sedan and a regular Mercury Marquis Wagon. A back-up is provided through a standing arrangement with a near-by Budget Rent-a-Car.

Garaging & Maintenance

The micro vehicles are garaged by each enterprise member - the shared vehicles on an open lot next to the maintenance facility of the Transportation Services Department.

Maintenance of both the micro (based on a mailed reminder) and the shared vehicles is undertaken by the university's maintenance facility staff. Shared vehicles can be obtained at a counter just inside the maintenance facility - with a reservation made by telephone or in person.

Operation

Due to lack of safety related performance data - from actual use of the micro vehicles - the U.S. DOT and the insurance carrier required that the vehicles be restricted from entering the interstate highways. This restriction has had a detrimental impact on the mobility enterprise experiment - affecting what would have been perhaps quite a different usage pattern: trip length distribution and % share travelled by the micro vehicles.

Each household is given, in addition to the micro vehicle, 10 coupons per month - with a cash value of $7.00 each. These coupons are used for renting the shared vehicles: each weekday (Monday-Friday) rental costs 2 coupons, each weekend day (Saturday-Sunday) 3 coupons. Additional coupons can be purchased at the rate of $7 each. In Group 1, any unused coupons were bought back at $5.00 each. In Group 2 no returns were allowed. The features offered in exchange of the monthly fee ($165-$208) are presented in Exhibit 6.

Exhibit 6

FEATURES COVERED BY MONTHLY FEE

* an individually garaged micro vehicle - intended to satisfy most commuting and 'around town' driving

* access to a shared fleet of intermediate and full size vehicles - intended for trips for which the micro may be considered unsuitable

* all insurance costs

* all maintenance costs

* all registration and licensing costs

* taxes

Note: Gasoline costs are NOT covered.

Utilization of the micro cars by trip purpose, based on actual vehicle diaries (with an average annual distance of 11250km), is presented in Exhibit 7. During the first year of operation, the shared vehicles have been utilized 26% of the time - ie. 219 vehicle days out of 805 available. A summary of use - consisting almost entirely of out-of-town trips - is presented in Exhibit 8 .

Exhibit 7

MICRO VEHICLE UTILIZATION

Trip Type	PERCENT TAKEN IN MICRO VEHICLE Trips	Distance
Grocery Shopping	70.5	70.1
Non-Grocery Shopping	66.8	67.2
Commuting	79.4	75.5
Serve Passenger	90.9	84.9
Social/Recreational	69.9	39.8
Errands	78.9	74.9

Source:
The Mobility Enterprise Experiments: An Overview (Table 10)
M.J. Doherty & F.T. Sparrow/Purdue University
Presentation to AAA Foundation for Traffic Safety, Feb 1984.

User satisfaction with the micro vehicles - as gauged by periodic questionnaires - has been increasing during the experiment: from somewhat satisfied - to very satisfied. The $ value placed on the micro vehicles by the users has increased by 23% during the same period.

Exhibit 8

SHARED FLEET UTILIZATION

USAGE BY MONTH

Month	Vehicle Days Used	Total Vehicle Days Available per Month	Percent Use for Month
February	2	28	7.1
March	9	31	29.0
April	9	30	30.0
May	5	31	16.1
June	7	30	23.3
July (1	24	63	38.0
August	35	93	37.6
September	18	90	20.0
October	28	93	30.1
November	32	90	35.5
December	36	93	38.7
January (2	14	60	23.3

USAGE BY TEST GROUP

(July 15 - January 20)

	No. of House-holds	Vehicle Days Used	Vehicle Days Available	Percent Used
Group I	7	62	564	10.9
Group II	5	113	564	20.3
TOTAL	12	175	564	31.0 (3

1) One shared vehicle available January 22 - January 15; three vehicles available July 16 - January 20.

2) Includes only first 20 days.

3) Group II ('no rebate') accounted for over 64% of shared fleet utilization.

Source:
The Mobility Enterprise Experiments: An Overview (Table 9)
M.J. Doherty & F.T. Sparrow / Purdue University
Presentation to AAA Foundation for Traffic Safety, Feb 1984.

Comments

In setting up the Mobility Enterprise, a major effort was required to:

- obtain waivers for importing the micro vehicles
- arrange insurance coverage
- arrange maintenance delivery systems
- procure vehicles
- calculate costs to be charged to the participants.

These administrative efforts have been extremely time consuming - but also critical to the performance of the Mobility Enterprise. The location of the demonstration has allowed project staff to be directly involved in data acquisition- and to quickly identify and respond to logistics problems.

The two parameters found most important during the experiment for the success of an SVF enterprise are:

1. attributes of the micro vehicles

2. size of the shared fleet.

These parameters are not mutually exclusive - a spartan micro vehicle would tend to increase the shared vehicle fleet (GAV) utilization.

Review of the trip diary records suggests that:

- operating range of the micro (MAV) vehicle is not a significant variable

- occupant capacity is a dominant variable: to be cost-effective, the micro vehicle needs 3 seats

- peak period (weekend) demand for shared vehicles has not become a critical factor - because:

  - long trips have exhibited no seasonal patterns

:

- there is no indication, from the trip length frequency distribution, that would indicate more intense weekend travel

- fewer trips are taken on weekends than during the week (there are many weekends when households take no trips at all).

A rather elaborate, automated (ie. key-in type) data acquisition system was installed in 4 micro vehicles and operated for 18 months. While the system was demonstrated to be technically reliable in operation, its use was discontinued due to lack of interest. (for information collected, see Appendix F).

With the level of maintenance provided during the demonstration, the micro vehicles have performed well in a city driving environment. For a large scale introduction of mini/micro vehicles [eg. <590kg and <800cc] into the U.S., the present Federal Motor Vehicle Safety Standards (FMVS) would have to be somehow relaxed. Requiring strict adherance with these standards, would result in micro vehicles having to be built with such extensive (=heavy & expensive) safety features that they would stop being micro vehicles - and most certainly stop being cheap urban specialty vehicles. The same situation applies in Canada.

The Purdue Mobility Enterprise - a successful and informative shared vehicle fleet and micro vehicle experiment - will be closed in September 1985. Final evaluation report will be available shortly afterwards.

Sample materials for Mobility Enterprise are included in Appendix F.

2.5 **STAR** - San Francisco, U.S.A.

Definition : Short Term Auto Rental Club

Location

The STAR enterprise is operated in San Francisco, California - a city, which is encircled by the Pacific Ocean and the San Francisco Bay. The population of the city is 679 000 The total population of the San Francisco/Oakland metropolitan area is roughly 3.25 million (1980 census).

The enterprise site - a major residential development of some 4400 households (10000 people) called Parkmerced - is located between S.F. State University and S.F. Golf Club east of Lake Merced at the southeast corner of the city. (for a map, see Appendix G/Item 6). It is a well maintained high density development consisting of apartments and row houses. The population mix at the complex is close to that of San Francisco proper - with perhaps slightly more elderly, retired people. One quarter of the households do not own a vehicle, or do not have full time use of a vehicle. Of these, 60% have at least one person with a valid driver's licence.

Transportation Service

Road access from Parkmerced complex to near-by non-residential developments includes State Highway #1 and some major arterial streets. There is excellent access to downtown San Francisco, 15 km away (Golden Gate Avenue & Market Street), via Interstate 280 and U.S. 101.

Indoor parking for the residents is provided along the entry boulevard (Higuera) to the area.

Bus service is operated along the arterials at fairly high frequency during the day and the evenings. There is light rail service to downtown from the other side of the Parkmerced community.

Administrative Structure

The STAR enterprise is operated as a private, profit motivated shared vehicle club by the STAR Company. The operation is managed by its mentor and owner John Crain, president of the consulting firm which originally studied the feasibility of setting such a scheme up somewhere in the Bay area. While that feasibility study was undertaken with federal (UMTA) and state (CALTRANS) funding, the implementation of the demonstration has not received any financial support.

The STAR began operation on 4 December 1983.

The marketing effort for STAR included a promotional letter to Parkmerced residents (a survey had been undertaken during the feasibility study). There were several newspaper articles, most notably one in the Sunday San Francisco Examiner and one in the Wall Street Journal. Introductory rates for joining STAR were also used during the first 9 months (free coupons matching the amount of the membership fee).

Membership

There are currently 200 active member households. About 350, or 8% of the Parkmerced community, have been members at one time (for growth pattern, see Exhibit 9).

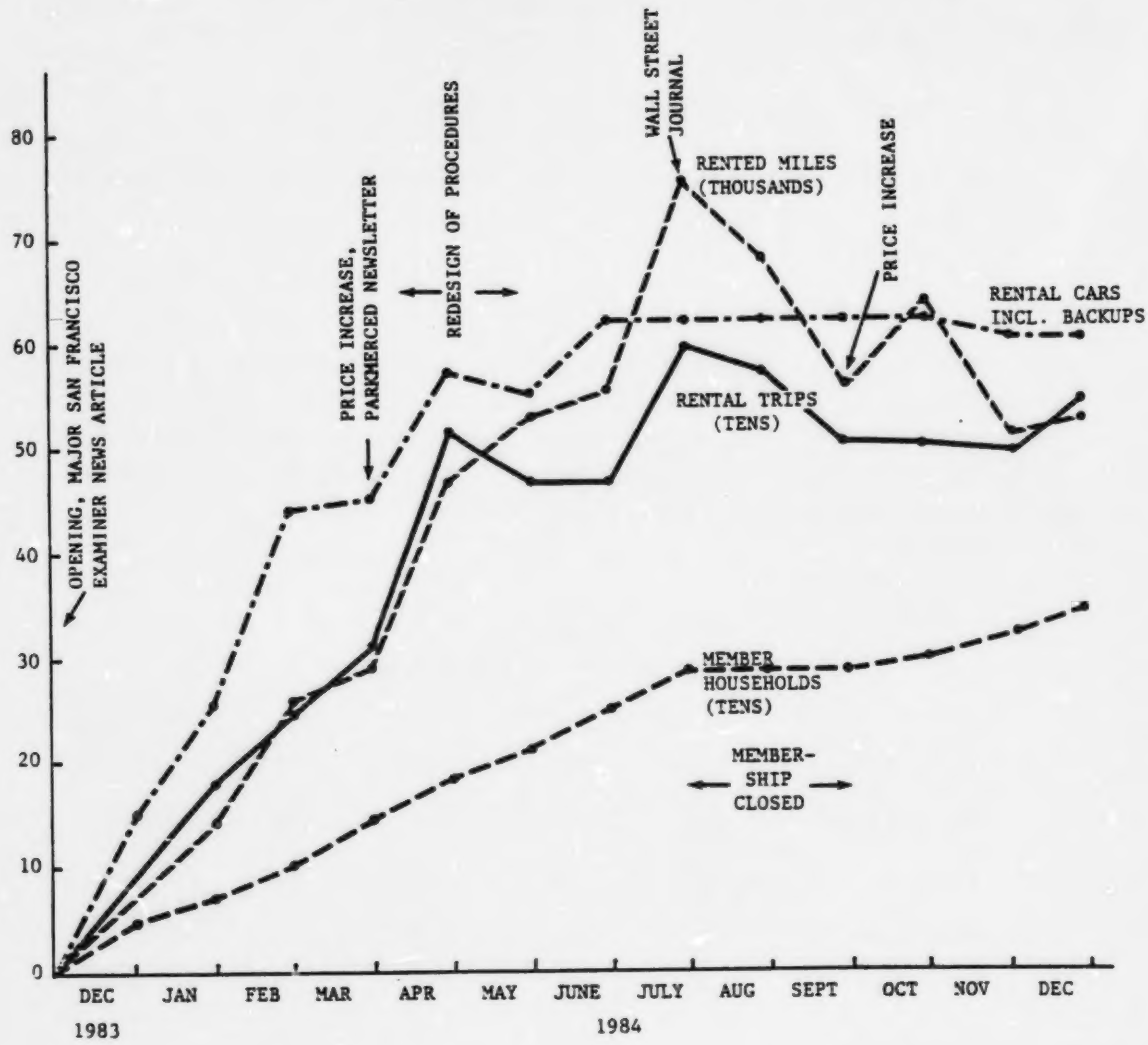
To join, one household member applies for an account. His/her driving record is verified - and other household members are included as authorized drivers. [The driving record of the STAR club has been extraordinary: 4200 car days without an accident].

Originally, no credit checks were performed - and, as a result, serious debt problems developed within a few months. This resulted in having to pass the bad debts to a collection agency, removing non-payers and instituting far stricter membership requirements:

- verified credit history:
  - poor, even 'medium' credit risks would not be accepted as members

Exhibit 9

STAR GROWTH PATTERN



Source: STAR PROJECT - Report of First Year (Exhibit 1)
John Crain / Crain & Associates
TRB Annual Meeting, January 1985.

  - a $200.00 deposit required from those with nearly perfect records
  - only outstanding records would qualify for a non-deposit membership

* good driving record: maximum of 2 accidents (no matter whose fault) or moving traffic violations in the past 3 years

* employed at present job 3 years or more

* fixed expenses no more than 50% of take-home income.

Fleet Composition

The initial 'fleet' consisted of 2 used vehicles bought at an automobile auction. Within 6 months (by summer of 1984), the fleet had grown to 60 vehicles - all purchased used at automobile auctions (at a total cost of $200 000). The fleet composition was then (Exhibit 10):

Exhibit 10

STAR FLEET COMPOSITION

Basic Fleet	Cars	Wagons	Other	Total	%
Subcompacts	33	5	0	38	63
Midsize	12	0	0	12	20
Full size	5	1	0	6	10
Pick-ups	N/A	N/A	3	3	5
Vans (large)	N/A	N/A	1	1	2
	50	6	4	60	100

Source: STAR PROJECT - Report of First Year (Exhibit 1)
John Crain / Crain & Associates
TRB Annual Meeting, January 1985.

Based on the demand (for each vehicle type) during the first few months of operation, it was determined that a size split of 85% subcompact, 10% midsize and 5% large would perhaps have been more desirable. This could, however, change significantly when more is learned about the utilization rates of specialty vehicles and station wagons, and about the salvage values of all vehicle types at the resale auctions.

Six months from the start many vehicles developed persistent problems. Part of the reason, it is speculated, was having purchased the used cars perhaps too 'cheaply' at the auctions. The goal of being able to buy 5% below the low Blue Book value and to sell 10% above the high Blue Book value may not only be hard to achieve but perhaps alltogether undesirable. There is no evidence that the problems would have been caused by rough handling of the vehicles by the club members.

Garaging & Maintenance

The STAR parking spaces are on the ground floor of a 4 story underground garage. The leften most entry lane has been reserved for STAR vehicles. Within a few metres of the gate, the returning vehicles will be stopped to the right of 3 gasoline pumps. These pumps were available to the STAR system from the start - having been installed by a regular vehicle rental company who used to operate at the site previously (but who could not generate the required profit margins). Vehicles waiting for pick-up are parked between the STAR office and the gasoline pumps.

Parkmerced development has arranged parking for the STAR fleet which is easily accessible from the STAR office. This preferential location is important to its effective operation, since it minimizes the time that an attendant must be away from the office when parking a returned vehicle or when fetching a vehicle which is going to be picked up by a member.

Day-to-day servicing of the vehicles is handled at an existing service bay within the Parkmerced garage, and quick car washes at Parkmerced's manual coin wash. All major repairs, however, are contracted to several near-by garages - depending on who is known to be good at what.

Contrary to what was somewhat expected, personal hygiene considerations have not become an issue within the STAR operation - people are voluntarily keeping the vehicles surprisingly clean.

Operation

The office is run by 1 manager, 1 full time and 2 part time assistants. Only one person is on duty at a time. There are two shifts, allowing operation from 7am to 9pm seven days a week. To make this (one person) operation possible, the operational steps had to be designed with extraordinary care. The steps required by the individual for taking a reservation, releasing, receiving and maintaining each vehicle had to be minimized . The operation is also supported by the manager's and his wife's time required for sorting out the records, purchasing and preparing vehicles and for arranging for maintenance.

A steady fleet of 60-70 vehicles appears optimal from a cost-effectiveness standpoint. More vehicles would require two persons on duty all the time - which wouldn't allow the operation to stay self sustaining with the current rental rates.

Another possible STAR concept might be to set up perhaps 5 or 6 operations within the same general area. This might make the purchasing and selling of the vehicles, and contracting of all major maintenance, more cost-effective. It would also help in responding to unique peaking problems - by allowing the exchange of vehicle types or temporary borrowing of vehicles from another site.

The durations vehicles are kept are fairly typical for short term rentals, except that they include a surprising number of very short trips (eg. 23 min to whip to a near-by store and back). Such trips would not be made with regular rental vehicles for obvious reasons - the companies charge for at least half a day anyway; and the effort to take a vehicle out for less than half an hour is simply too much even with the quick check procedures.

Extensions - about which the members are suppose to inform the office well in advance by telephone - are frequent. There is no official penalty for failing to request an extension - a friendly reprimand by STAR staff has usually been sufficient.

In the case of unavailability of a vehicle (of the exact type or for the exact time requested), members have proven quite flexible. There is no back-up contract with any near-by rental or taxi company. People simply are expected to change their plans - and, the next time, make a reservation earlier.

Rental charges, which are time and distance based, are presented in Exhibit 11.

Comments

"In the first year we unearthed numerous operational problems - and, in hindsight, mismanaged the fast growing business. These mistakes and redesigns render the first year results highly questionable."

"Many support services originally planned - eg. gasoline sales to Parkmerced residents, reselling of cars, bicycle renting - have had to have been delayed. Complete system remains untested."

UMTA is currently funding a project by Cambridge Systematics/Transportation Systems Center to evaluate the effectiveness and community benefits of STAR. A draft report is expected by the end of June 1985, and a final report perhaps in September.

According to preliminary information, some members have forgone a planned purchase of a car because they have been able to use bus service for commuting trips and the STAR vehicles for other trips. If confirmed, this would be a significant development towards achieving the original goals of STAR: conservation of money and energy resources.

Exhibit 11

STAR RENTAL CHARGES

- Effective 1 Oct 84 -

	RENTAL PERIOD	
CAR CLASS	SHORT TERM Gas Provided	DAILY w/o Gas
Runabout	1.00c/min (to $7.99)	$8.00/day
	8.75c/km	6.25c/km
Middle Size	1.25c/min (to $8.49)	$8.50/day
	10.00c/km	6.25c/km
Full Size	1.50c/min (to $8.99)	$9.00/day
	11.25c/km	6.25c/km

Weekend Surcharge = $0.15/hour
(Fri 18:00 - Mon 07:00)

Minimum Distance Charge = $4.00/day

Monthly Rentals - Runabout = $285.00/month

Weekday Business Special = $ (call manager)

Note: Prices do include public liability and property damage and **$200.00 deductible** collision insurance. The deductible can be waived by paying 20% of the charge for short term trips, or $2.75/day for daily rentals.

Source: STAR PROJECT - Report of First Year (Exhibit 3)
John Crain / Crain & Associates
TRB Annual Meeting, January 1985.

However, it is also known that some residents (who do not own cars) have substituted STAR vehicles for transit trips - albeit not to commute. While this is an indication of achieving another desirable goal - increased mobility (for transportation 'disadvantaged'), it also indicates increased fuel consumption. What the net effect has been, remains to be seen. It may be speculated that in a typical Canadian situation - where the level of transit service to majority of destinations may be higher - the tendency to replace transit trips by vehicle trips would be less. In an SVF scheme, which is correctly located, this could result in substantial net energy savings.

The STAR enterprise has discontinued its operation as of 31 March 1985. There are 6 reasons, it may be speculated, that have led to the decision to shorten the life of the experiment in half (originally planned for 3 years):

1) credit problems - having failed to perform an adequate background check on membership applicants

2) maintenance - cars purchased at the auctions too 'worn out' = very difficult/expensive to overhaul for reliable operation
   - some slippage in STAR's own periodic maintenance

3) garaging - location at the edge of a massive development made it inconvenient to most households (ie. beyond 200-400m)

4) day-to-day management - problems resulted in excessive time requirements for monitoring and direct involvement by the owner

5) rental rates - the operation was significantly underpriced in the beginning - making subsequent catch-up increases doubly difficult

6) off-peak utilization - day time utilization remained low and winter period dropped to 20-30% (compared to 40-50% during summer&fall).

Sample materials for STAR are included in Appendix G.

2.6 Summary of Visited Experiments

A summary for the visited shared vehicle fleet experiments is presented in Exhibit 12.

During the visits it became evident that many different enterprise structures can be viable - as long as the implementation site is most carefully selected and the operation is tightly controlled. Another critical factor seems to be - at least with these unique, first experiments - the enthusiasm and personal attention provided by the enterpreneur. These systems are clearly all sufficiently out-of-the-ordinary, and their success so dependent on a very complex set of economic and human behaviour factors, that they will require a combination of business savvy and tender loving care to reach their fullest potential.

With these cautions in mind, however, it does seem equally certain that shared vehicle fleet schemes will slowly penetrate the transportation scene. They will be driven by some powerful economic, accessibility and convenience considerations. Once correct target markets have been identified - and the product carefully designed to match the market preferences - SVF enterprises, with a variety of organizational and operating structures, will emerge in a significant way.

Exhibit 12

SUMMARY FOR VISITED SVF EXPERIMENTS

SCHEME	TYPE	LOCATION	FOCUS	START DATE	MEMBERSHIP		No. OF VEHICLES	CURRENT STATUS
					Size hh/dr	Restr		
VivallaBil	Car Co-operative	Örebro Sweden	Non-work	19 May 1983	39/50	Yes	4	Stabilized & slowly growing
Sambil	Private Car-Hire Club	Västerås Sweden	Non-work	3 Jan 1980	98/?	Yes &No	50	Stable
Greencar	Joint Ownership	Oxford U.K.	Non-work Business	15 Jun 1981	4/6	Yes	2	Until van lasts, then new arrangmnt
Mobility Enterprise	SVF&Micro Demonstration	West Lafayette U.S.A.	Non-work (SVF&micro)	22 Jan 1983	14/31	Yes	14 micros 2 SVF	Stable Closing 1 Sep 85
STAR	ShortTerm AutoRental Club	San Francisco U.S.A.	Non-work Work	4 Dec 1983	200/?	Yes	50	Very fast growth - then stable Closed 31 Mar 85

3. INSTITUTIONAL ISSUES

3.1 Ownership Structure

Co-operative

A co-operative structure is one of the options available when setting up an SVF enterprise. Such a co-operative can be readily designed to abide by all the relevant legislation - eg. Province of Ontario's Co-operative Corporations Act and its Regulation 183 (Appendix B).

However, there are several factors which must be considered before selecting the co-operative route - so that the enterprise would have the greatest possible chance for success:

* capital requirements

- significant capital required for the start-up investment (for vehicles and facilities)t and for securing and stabilizing an initial operating period (of perhaps 12-18 months)
- decision on how the capital will be assembled (a 35% equity considered a prerequisite in Ontario):
  - o from the members of the co-operative
  - o from the developer of the chosen residential complex)
  - o from the government(s) (ie. for a pre-specified demonstration period)

Note: - a co-operative with no start-up capital will have no chance of borrowing

- without the capital, a co-operative can be wiped out at first breath of adversity

- the co-operative 'ideal'
  - except in unique, often adverse circumstances, the ideal (of individuals, driven by a co-operative spirit, pitching in for common good) does not exist - at least, not for any length of time
  - people, ostensibly working as one happy family, can quickly generate personal animosities and doom an enterprise to failure

- the co-operative 'reality'
  - there must be a direct, measurable benefit from the co-operative to its members for it to succeed, eg:
    - o significantly lower car ownership/usage costs: true costs (as oppose to perceived costs) can be used to demonstrate, if convincingly documented
    - o profits split at the end of the year (then everybody will act and react responsibly)
  - take a joint risk (=contribute to start up capital) and assume a joint profit

- leasing the vehicles from another company - and renting to members
  - adding another step of profit making, how ever small (ie. with however attractive rates)
    - o will jeopardize the co-operative's ability to keep short term rents attractive
    - o will evaporate any gains that would have been otherwise achieved
  - the reason leasing companies make any money is that they do everything - from start to finish
    - o acquisition of vehicles
    - o renting&leasing of vehicles at as high rates as the market can bare
    - o maintaining the vehicles (=avoiding contributing to yet another outside profit centre)
    - o disposing of vehicles (for maximum salvage)

Note: if any one of the above steps is given to somebody else - it will chew into any profit there was to be made

- knowledgeable management

  - the profit margin on any one vehicle can be slashed to nothing with a mistake/unluck at any one of the stages - by:
    - o paying too much
    - o selecting vehicle model/type/condition poorly
    - o being careless in reviewing membership applications:
      credit problems
      rough handling of vehicles
      accidents (raising insurance premiums)
    - o charging rents which are:
      insufficient, or
      too high
    - o running an aloof, non-responsive SVF operation
    - o setting wrong maintenance standards
    - o failing to monitor performance of maintenance contractor(s):
      unnecessary work
      work charged but not done
      incompetent work
    - o being unlucky: engine or transmission blows outside warranty
    - o selling for too little

- incorporation

  - the co-operative should be formed as an incorporated legal entity.

Brokerage

Many of the above cautions and potential problem areas - for the co-operative approach - do point to the desirability of a private transportation broker establishing the SVF enterprise. The prime advantages would be:

- maintaining direct control

  - for strategic choices
  - for day-to-day operating responsiveness

- * membership applicants screening

  - more thorough: a co-op board might tend to avoid imposing uncomfortable questions on residents
  - appearance of neutrality (at least, consistancy)
  - confidentiality: no nosy neighbours prying into one's past credit and driving records
  - relative ease of firing an unruly member

- * corporate structure

  - somewhat easier legal manouvers for
    - o incorporation
    - o licences & permits
    - o disbandenment

  - less co-operative 'realities'
    - o less hackling and individuals trying to take advantage of a dreamy eyed co-op group
    - o less reliant on volunteer help - which is great but which can backfire (evaporate once early enthusiasm evaporates)

- * knowledge of rental/leasing business (IF acquired)

  - more realistic choices at: purchase
    pricing
    maintenance
    disposal.

There are three major potential disadvantages with a private transportation brokerage approach:

- * lack of adequate capital to
  - set up: purchase correct vehicles
    provide proper support facilities
  - secure initial operation = buy time for finetuning
  - provide the TLC (=mandays by owner) so necessary in any new venture of this type

- * insufficient knowledge of probably at least one of the critical steps in the highly competitive rental/leasing business

- unwillingness to take the risk - particularly considering the low potential yield in even best of circumstances - in a previously uncharted business venture.

It is the third factor which is likely to prevent any of the established rental companies from being willing to set up a shared vehicle fleet system at a residential complex. An attempt by one of the main companies failed previously exactly at the site where STAR has been operating. STAR has had its problems - and, in fact, closed its operation in March. But it came very close to making it - and would have, had it not been for some fundamental misjudgements made early on in the experiment. Whereas the rental company had all the knowhow and business savvy that can be expected - but could simply not operate (sufficiently) profitably at such a location. The contribution to national marketing overhead, and the profit margins, expected from typical rental agency branch operations make it virtually impossible for them to sustain operation at a typical residential SVF site.

3.2 Vehicle Purchase and Maintenance

Motor Vehicle Dealer

In order to be allowed to purchase and sell used vehicles at auctions, it will be necessary for the enterprise owner to register as a motor vehicle dealer - eg. to comply with Province of Ontario's Motor Vehicle Dealers Act and its Regulation 665.

The flexibility to purchase used vehicles is highly desirable even for shared vehicle fleet enterprises which purchase brand new vehicles. This flexibility becomes essential, however, as soon as there is any uncertainty about member preferences, total fleet size, expected utilization rates - and, particularly, about what rental rates may be acceptable to the membership.

While purchasing used vehicles, for use in a shared fleet, can be far more cost-effective than purchasing new vehicles (as long as they are acceptable to the membership), this must be done with extreme care. STAR has well demonstrated the dangers in purchasing too cheaply - that is, vehicles which are too close to their useful service lives: maintenance costs can suddenly skyrocket. Even if this happens only on two or three vehicles - within an initial fleet of a dozen, it can cause significant financial hardship. In fact, there has been shortages in the market place of good, clean used vehicles. Rent-a-Wreck franchisees in Vancouver, for example, have had to refer customers to Tilden, Budget and Hert. Practical New Car Rental has since been formed to ensure availability of vehicles (choice of only three: Tempo/LTD/Econoline) to the customers.

In order to register as a dealer in Ontario, the premises of the applicant must be approved by the Registrar. A SVF office at a residential complex is considered acceptable - as long as it is somehow attached to the parking or other maintenance facilities of the complex - or, if amongst the residences, it is on a floor which is already used by other businesses.

The dealer licence would be restricted to purchasing and selling at the auctions - ie. it would not include the right to deal with the public-at-large. This would probably preclude purchase of used vehicles for the members' personal fleets also. Vehicles could only be purchased when they were intended to become part of the shared vehicle enterprise.

Vehicle Registration

Vehicles can be registered for joint ownership - which makes setting up a green car scheme quite convenient. Of course, green cars can operate equally well without joint ownership registration - by covering those aspects with separate legal agreements. Practical considerations, eg. the size of the registration form and of the corresponding computer records, prevent joint registration by more than 3 or 4 people - in addition, such ownership would be looked upon suspiciously by the insurance carriers (lacking clear distinction of responsibility in possible court cases).

The practical approach for registering the vehicles of an SVF enterprise is for the enterprise to incorporate and register the entire fleet. All other ownership/share considerations can then be handled through separate legal agreements between the co-operative's members, or between the transportation broker and the membership.

Vehicle Maintenance

In order for the SVF staff not to have to apply for any of the various categories of compulsory motor vehicle mechanics' licences (Certificate of Qualifications), only minor tune-up type maintenance can be undertaken on site (ie. increase tire pressure, change sparkplugs/filters/...).

The most practical arrangement will probably be to contract for all maintenance with one or more near-by reputable local garages or the emerging one-stop car care centres. This will however put the onus on the enterprise manager to be very knowledgeable about vehicle maintenance in order to be able to monitor closely the performance of the maintenance contractor (no matter who is selected). In any fleet maintenance, this will be essential for securing value for money.

No municipal licence will be required - at least in Metropolitan Toronto (By-Law No.20-85) - for maintaining a private fleet of vehicles, even if all maintenance is undertaken on site by licenced mechanics who are part of the SVF enterprise staff.

Maintaining, however, also the members' (who also are part of the public) personally owned vehicles might result in the Licencing Commission requiring a garage licence - even though no services might be offered to the public-at-large. This could be only determined by actually establishing such a service, and presenting it to the Licencing Commission for a decision.

The Province of Ontario would only require a garage licence if this garage wished to certify vehicles (the old categories of A/B/C are not active).

Note: there are obviously no regulatory implications
from shared vehicle fleet enterprises vis-a-vis
- taxis & limousines
- public transit,
for the fundamental reason that nobody is being
'driven around' in such operations.

Refueling

There are strict regulations concerning the location of automotive fuel dispensers and tanks: neither can be indoors, and the tank must be installed underground. The installation must be done by a registered contractor (in Ontario, with Ministry of Consumer and Commercial Relations). These requirements are different for different fuels - eg. in the case of propane, for example, the tank must be above ground with certain clearances - probably precluding most residential complex installations. The dispensers, for gasoline and propane, must also be at least 8m apart - all of which makes it unlikely that propane vehicles could be included in the shared fleet.

If the enterprise owns and operates the (private) fleet vehicles, the rental rates charged are all inclusive (distance and time based & include fuel) and if members are billed on a monthly basis, the fuel dispensing operation is considered a 'consumer outlet' (eg. as taxi fleets). Such an outlet does not have to be licenced as gasoline retailer. If the fuel is charged on a specific $/L basis, and the members can drive in and fill up their SVF cars (or their own personal cars) in the middle of the rental period in exchange of money (whether cash or credit), the outlet will have to be licenced as gasoline retail outlet.

The dispensing operation, while required to be outside, can be placed under a canopy extended from a building (leaving 3 sides open). This would offer a more pleasant (competitive) operating environment - and an SVF enterprise, which does not intend to contract the refueling to some near-by retail outlet, should take note of the buildings and grounds layout when evaluating possible sites.

Municipal zoning by-laws and building permits must be carefully investigated. These rules and interpretations are very site specific - and can not be avaluted ahead of time on some general (guideline) basis.

The administrative and regulatory settings - as far as vehicle dealer licensing, vehicle registration, maintenance and refueling (zoning by-laws, etc) are concerned - are quite different in each of the provinces. A thorough review of the basic legislation and the specific regulations, as well as personnal interviews of the administrators, are necessary to establish the exact management structure and operating arrangements under which a shared vehicle fleet enterprise can best be established in each province. (The earlier text relates primarily to Ontario.)

3.3 Insurance

The current situation in Canadian automobile insurance industry is not the best for getting reasonable rates for untested experiments. Underwriters have become more cautious - due to rather poor 1984 - with every risk that is not straight out of the book. Most could not be expected to express any interest in insuring anything as off-beat as a shared vehicle fleet, many would take a take-it-or-leave-it attitude with respect to rates. Some consider the insurance market chaotic - as being in the middle of an upward rate crisis.

In attempting to insure an SVF enterprise operation at reasonable rates, there are several factors to be considered:

* present complete details of the intended operation to the broker so that he will be in a position to highlight the strengths of the operation to the underwriters, ie.
    - the operation is NOT a run-of-the-mill daily rental, but a controlled membership fleet operation -

quite closely resembling typical private vehicle insurance situations & risks

- * demonstrate a very serious approach to risk management (of yours and the underwriter's)
  - allow prescreening of all candidates by the insurance carrier (reject applicants the carrier finds high risk)
  - request members to sign binding contracts on safe operation of the fleet vehicles
    - o restricted to authorized members only (eg. guests of members to be included only under much higher, daily rental type temporary rates)
    - o no driving under the influence of alchohol or drugs
    - o always with seat belts and child restraints on
    - o within speed limits and other rules of the road
    - o no towing or pulling of other vehicles or trailers, except with the shared vehicle so designated and equipped (complete trailer package,...).
    - o .....(add points based on real SVF situation being negotiated with an underwriter)

- * limit the membership to age group 25-70
  - however, if this does not reduce the rates significantly, request 21-75.

The insurance rates can - if not quite make or brake an SVF operation - make a significant difference, at least in the daily rental rates. Data should be accumulated on the accident rates of such controlled membership operations. The experience at STAR and VivallaBil has been excellent and should be presented as supporting evidence to the underwriter.

3.4 Trends in Automated Services

In order to make their rental operations more competitive, all major companies are offering services by credit card - eg. 'red card' and 'blue card' at Tilden, 'computerized rapid return' by Avis. In the latter system, only the car number, odometer reading and the gasoline gauge position are entered: a record of expenses is printed immidiately to go with the customer while the charges are added to his/her monthly billing. The new, world-wide on-line system 'Phoenix', to be in operation by early 1986, is expected to reduce the time it takes to serve a customer down to less than one minute.

Smart cards - which have programmable microprocessors (to allow very specific applications) and non-eraseable memories - operate with reader terminals, where a 5-digit personal ID number (PIN) can be entered on a shielded key pad. Computer gas bars are presently being tested in Toronto. In rental applications, customer rental requirements would be read directly from the card and a ticket printed for reference.

In Skelleftea, Sweden, the number of a coinless parking meter is punched into a PX meter - which contains 'parking time' prepurchased at the parking authority. This pocket calculator looking device is then left on the inside of the vehicle on the dash (visible to the meter maids). This prepurchase technique of user time/distance would be particularly attractive considering the credit problems experienced by STAR.

At the Open University in Milton Keynes, U.K., a special 'Paydrive' meter has been developed to allow recording of the distance travelled by each shared vehicle. There are three models at present:

- Outrider - small car-computer to encourage ridesharing, improve maintenance and driving style for increased fuel economy

- Publicar 1 - for small scale shared car schemes eg. 1 car/2 households/4 users each with individual keyes
- Publicar 2 - for large scale shared car schemes eg. 4 cars/9 households, each with own plugged-in register.

The meters will also provide continuous monitoring and display of the level of fuel efficiency achieved by each driver. The current versions of the meter indicate [high fuel efficiency] when the vehicle is standing engine running (when it should display the poorest fuel efficiency). The main limitation of these meters (Appendix E/Item 3), however, is that they do not record time. This makes them impractical for a typical shared fleet operation at a residential complex in Canada - where tight control of the time element is going to be essential for increasing the daily (chargeable) utilization rates of the fleet vehicles. The meters may be quite adequate, however, for 2-4 household green car schemes where the time is controlled by 'mutual consent' - of course, most of these arrangements will more likely be operated with vehicle log books only.

The self-serve society is, in the opinion of many, finally emerging. Automated teller machines (ATMs) already can handle 85% of normal transactions at many banks. A coast-to-coast service called Interac, which allows transactions by a customer on his/her account using an ATM at any branch of the four participating banks and one credit union, has been just announced. Soon consumers will be quite adapt at perhaps even picking SVF cars at automated counters? In any case, the possible automation of at least some of the SVF transactions should be seriously considered. It would make it possible to operate a sizeable fleet (of perhaps 50-70 cars) with only one full time employee on each shift. This degree of efficiency may ultimately be required - to guarantee rates that would make an SVF attractive to the average consumer.

:

4. IMPLICATIONS FOR A CANADIAN DEMONSTRATION PROJECT

4.1 Criteria for Projects

This section contains a point form list of desirable characteristics and criteria for establishing shared vehicle fleet experiments in Canada:

Location

- residential development
  - high or medium high density
  - 1000 households minimum (within 500m)
- CBD vs. Fringe
  - to be decided based on interest expressed in the survey
- adjacent development
  - commercial and some light industrial: for increased weekday utilization rates and possible zoning flexibility
- municipality
  - metropolitan

Transportation Service

- arterial bus line
  - 200-400 metres from enterprise site
- subway
  - 300-800 metres from enterprise site

Administrative Structure

- independent transportation broker
  - incorporated business
  - motor vehicle dealer licence
  - private fleet garage (ie. no metro licence)
  - transportation club for members (initiation fee & annual dues)

Membership Composition and Size

* restricted	- to complex residents & possibly including adjacent commercial development
* visitors	- only at the discretion of insurance carrier (with special, high rates)
* size	- 60-250 permanent households
* credit worthiness	- excellent risks only (careful background check)
* age	- 21-75 as a guideline - 25-70 if significant reduction in insurance rates
* driving record	- low frequency of accidents - no arrests or convictions in 5 years (for 'under-the-influence', reckless endangerement,...)
* membership agreement	- signing a prerequisite - consider: feasibility of trial period?

Fleet Composition and Size

* age of vehicles	- used, but refurbished and warrantied 9 months old if from rtl/leasing co. 2 years old if private (no taxis) - new: model selection after careful lifecycle analysis
* size	- 60-70% compacts and subcompacts - rest as a mix: large car + stn wagon or pass.van + pick-up - MAV/GAV destinction: marketing survey
* equipment	- automatic transmission & power strng - head restraints: including middle and back seats - infant & child carriers: several quick release/remount type

- handicapped controls: one set of quick release/remount type
- fuel flow meters & other monitoring devices in at least one vehicle (to be cycled amongst users)
- air conditioning (except sub-compacts)
- luxury package (one large vehicle)

Garaging & Maintenance

* garaging	- indoors: close to an outdoor fuel supply
* maintenance	- on site: restricted to minor tuneups only - contracted to local garages: with existing mechanics' licences
* fuel supply	- consumer outlet for fuel only ie. no gasoline retailer licence - supplier of fuel with an oil company

Operation

* service	- hours of operation: 07:00 - 21:00 two shifts - 7 days a week - reservation: in person & by phone - special vehicles: two vehicles: smoke&pet free handicap devices & child restraints recreational package efficient driving package luxury options large car - reasonable rules for persistant: failure to pick-up late return

* records
  - form signed at out&in
  - checked by attendant from vehicle
  - microcomputer processing
    vehicle out: immediate
    vehicle return: immediate or later
    monthly billing
  - consider: smart card automation
    Purdue device: vehicle&trip data acquisn
  - automation development & testing during demonstration

* pricing
  - for profit: financing charges/vehicle operating costs (c/w full administration)/vehicle salvage values/support costs: office, facilities,..
  - club fee & annual fee
  - consider deposit vs. ext.credit check
  - time & distance base
  - peak surcharges & lull period discount specials to gently balance demand

4.2 Suggested Demonstration Project

Objectives

The objectives of a shared vehicle fleet (SVF) demonstration project in Canada would be to:

1. demonstrate the administrative, regulatory and economic feasibility of implementing SVF operations

2. document the propensity of households to join, and to continue to participate, in residential transportation clubs

3. demonstrate the acceptability of micro vehicles in meeting every day metropolitan area transportation needs

4. document the energy and money savings accruing to house holds from participating in SVF transportation clubs

5. develope&demonstrate micro-computer software and vehicle use monitoring hardware necessary for cost-effective operation of SVF enterprises

6. develope&refine marketing techniques and materials necessary for expanding SVF operations.

Project Steps

A preliminary step-by-step outline for a possible Canadian demonstration project is presented in the following. A rough time estimate for each main task is also included.

1. SITE SELECTION

a) Select municipality within Ontario
(if another province is desired, first undertake
a detailed regulatory assessment)

b) Identify several candidate sites (fringe & CBD)

c) Rate the sites for their SVF potential - based on the following criteria:
- complex' physical layout
- support facilities: office/garage/maint./fuel
- transportation service: public transit
  personal fleets
- municipal zoning flexibilities: site itself
  adjacent propy
- developer interest & direct support
- distance to back-up rental/taxi companies
- ...

d) Select two primary sites

*) Time estimate = 1 month.

2. SURVEY OF HOUSEHOLDS

a) Design an introductory pamphlet for SVF clubs
  - concept description
  - typical operating rules & membership requir'ts
  - up-to-date car ownership cost data
  - benefits/disbenefits: HH fleet vs HH fleet + SVF

b) Design questionnaire (topics listed in Appendix I - which is from Phase I report/Exhibit 10) [anticipate necessary before/after comparisons!]

c) Administer questionnaire at two sites & follow-up as required

d) Analysis
  - initial reactions
  - desirable vs. essential attributes for
    - service & rules
    - vehicles
    - charges
  - anticipated SVF usage

e) Focus group to test & adjust findings
  - design
  - undertake
  - evaluate

*) Time estimate = 2 months.

3. DESIGN OF DEMONSTRATION PROJECT

a) Facilities & furniture

b) Shared fleet composition
  - vehicle types & initial number (MAV/GAV)
  - on-board equipment
  - used vs. new mix (detailed life-cycle analysis)
  - micro vehicle decision (TC)

c) Service definitions
  - start-up conditions
  - future options
  - voluntary driver training

d) Charges
  - assumptions: anticipated utiliz. rates,..
  - time vs. distance relative weights
  - peak & off-peak differentials
  - club fee & annual dues & deposits

e) Membership rules & legal contract

f) Administration & records
  - manual forms
  - immediate & scheduled future automation
  - development & testing of software

*) Time estimate = 3 months.

4. DEMONSTRATION INITIATION

a) Enterprise Structure & Management & Funding & Authorized Duration

b) Subject recruitment
  - first organizational meeting
  - preliminary commitments

c) Consultation & agreements (to match chosen enterprise structure)
  - residl complex developer & condominium board
  - regulatory agencies - provincial/municipal/
                                    federal (micro use):
        obtain all necessary licences & permits
        seek preferential treatments
  - insurance brokers/underwriters: presentations
                                     negotiations
  - rental & taxi companies: back-up arrangements
  - garage(s): maintenance contract(s)
  - service station: fuel contract
        (or possibly: oil company & supply contract)
  - automobile auctions: initial monitoring

d) Initiation
  - hiring of staff
  - acquisition of office and support equipment
  - acquisition & reconditioning of vehicles
  - official opening

*) Time estimate = 4 months.

5. DEMONSTRATION OPERATION

a) day-to-day management & operation

b) monitoring & fine-tuning

c) performance reports & client reviews

*) Time estimate = 24-36 months - to allow:
  - emergence of problems
  - corrective actions & reorientation
  - stabilization of - operation
    - membership.

Monitoring

The monitoring program will need to be designed well in advance of the initiation, to properly document the differences in household behaviour before and after having joined the transportation club. The monitoring effort should include at least the following factors:

1. Vehicle Use Patterns (all vehicles in each household's own fleet + the SVF):
   - trip length (km) by vehicle type
   - vehicle occupancy by vehicle type & by trip length
     (emergence of MAV/GAV distinction in both above)
   - utilization rates for each SVF vehicle
     by season/day of week/time of day
   * total annual VKT (HH fleet + SVF) by household
   * fuel consumption by vehicle & by household

2. Membership Trends
    - size & turnover over time by reason
    - payment punctuality by credit record category
    - satisfaction vs. original expectations
      vs. adjusted expectations (attitude change caused by behaviour chg)
    - SVF Usage
        - adherance to reservations
        - manner of handling (trashing vs. TLC/cleanliness/accidents)
        - influence of fuel-efficient driver training (TEMP/fuel flow meters/accurate user costs)

3. Technology Applications
    - micro-computer software:adaptability&ease of use
        - reservations system
        - pricing: time/distance mix & peak charges
        - vehicle use records: trip records
          vehicle handling
        - billings & credit control
    - hardware: vehicle use/trip purpose records
      vehicle handling & fuel consumption
    - micro vehicles

4. Marketing Techniques
    - survey & focus group follow-up: to refine&augment these techniques towards a more reliable gauge on SVF potential at residential sites
    - refinement of steps
        - introductory material vs. enquires rec'd
        - follow-up method
        - participation in introductory meetings
        - signing up: temporary vs. permanent
    - sketch planning technique for market analysis

5. Financial Performance
    - vehicle & other operating costs
    - maintenance costs by vehicle type (micro/subcompact/compact/medium&full/specialty vehicles)
    - vehicle purchase costs & salvage values (brand new vs. used from auction)
    - user charges optimization
        - time/distance components by vehicle type
        - peak surcharges & lull period discounts

APPENDICES

A. LIST OF CONTACTS

B. ONTARIO ACTS AND REGULATIONS

C. VIVALLABIL - SAMPLE MATERIALS

D. SAMBIL - SAMPLE MATERIALS

E. GREENCAR - SAMPLE MATERIALS

F. MOBILITY ENTERPRISE - SAMPLE MATERIALS

G. STAR - SAMPLE MATERIALS

H. GREENCAR - INVENTORY OF REPRESENTATIVE SCHEMES

I. SURVEY OF POTENTIAL SVF CLUB MEMBERS
- Preliminary Questionnaire Content

APPENDIX A

LIST OF CONTACTS

APPENDIX A

LIST OF CONTACTS

Norman Wilson
Senior Examiner
Credit Unions and Cooperatives Services Branch
Financial Institutions Division
Ministry of Consumer and Commercial Relations
555 Yonge Street - 8th Floor
Toronto, Ontario
M7A 2H6
Tel: (416) 963-0515

Alan W. Abrams
Registrar
Motor Vehicle Dealers Act
Investigation and Enforcement Branch
Business Practices Division
Ministry of Consumer and Commercial Relations
555 Yonge Street - 5th Floor
Toronto, Ontario
M7A 2H6
Tel: (416) 963-0411
(also: Robert S. Livingston, Assistant Registrar)

Donald W. Sandilands
Assistant Coordinator
Insurance Research and Development
Financial Examination Branch - Insurance, Loan and Trust
Financial Institutions Division
Ministry of Consumer and Commercial Relations
555 Yonge Street - 7th Floor
Toronto, Ontario
M7A 2H6
Tel: (416) 963-0474

William N. Drake
Technical Supervisor - Gasoline
Engineering
Fuels Safety Branch
Technical Standards Division
Financial Institutions Division
Ministry of Consumer and Commercial Relations
Shipp Building - West Tower - 4th Floor
3300 Bloor Street West
Toronto, Ontario
M8X 2X4
Tel: (416) 239-2948

J. Mitch Dykstra
Manager
Licencing Administration Office
Licencing and Control Branch
Transportation Regulation Operations Division
Safety and Regulation
Ministry of Transportation and Communications
2680 Keele Street - East Building
Downsview, Ontario
M3M 3E6
Tel: (416) 248-3416

Vincent Smith
Supervisor
Licence Issuing - Queen's Park
Central Region
Compliance Branch
Transportation Regulation Operations Division
Safety and Regulation
Ministry of Transportation and Communications
Queen's Park - Macdonald Block - Room M1-24
900 Bay Street
Toronto, Ontario
M7A 2A2
Tel: (416) 965-2206

Robert Gott
District Carrier Inspector
John Rhodes Driver Examination Centre
Toronto West District
Driver and Vehicle District Offices
Central Region
Ministry of Transportation and Communications
7900 Airport Road
Brampton , Ontario
L6T 4N8
Tel: (416) 793-4340

Judi A. Walsh
Regional Administrator/Acting
Toronto West
Employment Training Branch
Skills Development Division
Ministry of Colleges and Universities
3232 Bloor Street West - 2nd Floor
Toronto, Ontario
M8X 1E5
Tel: (416) 233-3281

Dick (Richard) Becks
Inspector
Metropolitan Licencing Commission
The Municipality of Metropolitan Toronto
20 Holly Street
Toronto, Ontario
M4S 3B1
Tel: (416) 488-2221

Peter Humber
Commerce Officer
Transport Division
Regulated Sector Branch
Bureau of Competition Policy
Consumer and Corporate Affairs Canada
Place du Portage - Tower I - 20th Floor
50 Victoria Street
Hull, Quebec (Ottawa, Ontario K1A 0C9)
Tel: (613) 997-4040

Bill Laird
Vice President
Manager - Automobile Department
Reed Stenhouse Limited
P.O. Box 250
Toronto Dominion Centre
Toronto, Ontario M5K 1J6
Tel: (416) 868-5968

Bob Collins
Consumer Liaison Officer
Insurance Bureau of Canada
181 University
Toronto, Ontario
Tel: (416) 362-2031

etc

APPENDIX B

ONTARIO ACTS AND REGULATIONS

APPENDIX B
ONTARIO ACTS AND REGULATIONS

Highway Traffic Act

Public Commercial Vehicles Act
& Regulation 832 (operating licences)

Motor Vehicle Dealers Act
& Regulation 665 (registration, fees, records, forms)

The Apprenticeship and Tradesmen's Qualification Act
& Regulations Pertaining to in-school & work experience training of:

* Alignment and Brakes Mechanic	(No. 19)
* Automotive Machinist	(No. 21)
* Auto Body Repairer	(No. 22)
* Automotive Painter	(No. 24)
* Fuel and Electrical Systems Mechanic	(No. 32)
* Motor Vehicle Mechanic	(No. 47)
* Transmission Mechanic	(No. 49)

Gasoline Handling Act (Chapter 185)
& Gasoline Handling Code (Regulation 439)

The Municipality of Metropolitan Toronto By-Law No. 20-85
By-Law No. 27-85

Respecting the licencing, regulating and governing of trades, callings, businesses and occupations in the Metropolitan Area.

* Application for Licence - Procedural and General Provisions	p. 13
* Automobile Service Stations	p. 10
* Cabs	p. 8
* Car Washes	p.123
* Drive-self Rental Car	p. 9
* Parking Lots	p.120
* Public Garages	p. 10
* Service Stations	p. 10
* Taxicab Brokers	p. 11

Co-operative Corporations Act
  & Regulation 183 (documents, fees)

Corporations Act
  & Ontario Regulation 152/82 (names, capital, objects, documents, fees)

Business Corporations Act, 1982
  & Ontario Regulation 446/83 & 678/83 (names, capital, documents, officers, information circulars, forms, fees)

Limited Partnerships Act
  & Regulation 578 (forms, fees)

Business Practices Act

APPENDIX C

VIVALLABIL

- SAMPLE MATERIALS -

Advertizing Pamphlet

Newsletter for Vivalla Community

Map of Orebro

Vill du veta mer ?

Kontakta gärna styrelsen direkt eller skicka in talongen nedan.

Styrelsen för VivallaBil består av:

Lennart Akerlund, ordförande, tel 20 18 16
Östen Lundqvist, sekreterare, tel 12 13 78
Bertil Sirênius, kassör, tel 13 55 99
Svend Nordström, ledamot, tel 18 72 71
Ari Kataja, ledamot, tel 13 41 01
Ann Ander, suppleant, tel 10 44 78
Anders Jern, suppleant, tel 14 22 99

VivallaBils postadress är:

c/o Kommunkontoret
Skaldegatan 14
703 71 ÖREBRO

✂- -

Frankeras ej
Örebro Kommun
betalar portot

Örebro Kommun
Vivalla / Lundby KDN

Svarspost
kundnummer 18080291
700 13 ÖREBRO

VivallaBil

ett nytt sätt att ha bil

VivallaBil är här!

VivallaBil
ett nytt sätt att ha bil

Det blev Opel Kadett med 5-dörrar. De första har nu levererats.

Åk VivallaBil
åk till självkostnadspris

Med VivallaBil åker Du till självkostnadspris varje dag året runt.

Som medlem är Du med och beslutar vilka priser som ska gälla.

Prislista

Styrelsen för Vivallabil har beslutat att följande priser skall gälla:

Grundavgift inkl 4 tim och 2 mil		25:-- Kr
Därefter betalar Du för milen		
Om Du kör mindre än 10 mil		11:-- Kr/mil
Om Du kör mer än 10 mil		10:-- Kr/mil
Om Du kör måndag - fredag	7.00-17.00	8:-- Kr/mil
Och för tiden		
Mer än 4 tim men mindre än 8		10:-- Kr
Mer än 8 tim men mindre än 24		30:-- Kr
Mer än 24 tim		5:-- Kr/4 tim

Specialpriser

Om Du ska köra mycket en dag, en helg eller en semester kan Du hyra bilen till specialpris med fri körsträcka

Första dygnet	220:-- Kr
Andra dygnet	130:-- Kr
Tredje dygnet och följande	125:-- Kr/dygn

OBS. Bensin tillkommer alltid!

Här är några exempel:

1. Du åker till Örebro centrum för att handla. Du kör då mindre än 2 mil och kommer tillbaka till OK Vivalla inom 4 tim. Det kostar Dig 25 kr + bensin.
2. Du åker till Kilsbergen för att gå en bit på bergslagsleden. Du kör då 6 mil och kommer tillbaka till OK Vivalla inom 8 tim. Det kostar Dig grundavgiften 25 kr, fyra mil dessutom 44 kr och ett tillägg för tiden 10 kr. Total kostnad 79 kr + bensin.
3. Du åker till Eskilstuna djurpark. Du kör då 18 mil och är borta hela dagen (14 timmar). Det kostar Dig grundavgift 25 kr, 16 mil dessutom 160 kr (Eftersom du kört mer än 10 mil blir det bara 10 kr/mil) och ett tillägg för tiden 30 kr. Total kostnad 215 kr + bensin.
4. Du åker till Göteborg över en helg (lördag, söndag). Du kör då 60 mil och är borta 2 dagar. Det kostar Dig då enligt specialpriset 220 kr för första dagen och 130 kr för andra dagen. Total kostnad 350 kr + bensin.

Bli medlem i VivallaBil !

VivallaBil är en ekonomisk förening öppen för alla som vill vara med. Man behöver inte bo i Vivalla för att vara med. Bilarna finns att hämta hos OK i Vivalla centrum. Föreningens medlemmar bestämmer själva hur verksamheten ska drivas. Medlemskapet innebär att Du betalar 1 000 kr i insats. Du betalar 100 kr per månad under 10 månader (juli och december betalningsfria) tills Du fått ihop till insatsen. På dessa pengar får Du ränta. Om Du vill gå ur föreningen får Du tillbaka insatsen.

Alla medlemmar betalar dessutom en månadsavgift på 50:- kr alla månader utom juli och december. Dessa avgifter ska användas till en vinterfond för inköp av vinterdäck, skidställ mm.

Sedan betalar Du när Du använder bilen, antingen kontant eller månadsvis.

☐ Jag ansöker om medlemskap i VivallaBil ek förening.

☐ Jag vill få mer information om VivallaBil.

Namn: ....

Adress: ....

Tel: ....

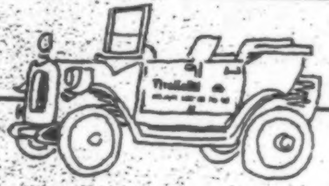
PROJEKT VIVALLA – nytt

Nummer 2
mars 1983

ÖREBRO KOMMUN Stadsbyggnadskontoret
ÖREBRO KOMMUN Vivalla-Lundby kommundelsnämnd
Stiftelsen Hyresbostäder i Örebro
Hyresgästföreningen

Ansvarig utgivare: Knut Strid, Stiftelsen Hyresbostäder.

VivallaBil – senaste nytt



Bilutställning i Vivalla

Lördagen den 12 mars 1983 kommer det att bli en bilutställning i Vivalla centrum. Där ska olika bilfirmor få tillfälle att ställa ut bilar som kan lämpa sig för VivallaBil.

Då får Du själv möjlighet att tillsammans med Din familj provsitta bilen, inspektera bagageutrymmet – räcker det? – och överhuvudtaget ta reda på vilken bil som Du tycker att man bör använda i VivallaBil.

Det kommer också att finnas uppgifter om bränsleförbrukning, testresultat mm.

Reservera alltså redan nu tid för VivallaBil-utställningen den 12 mars kl 10.00 – 14.00.

Välkommen!

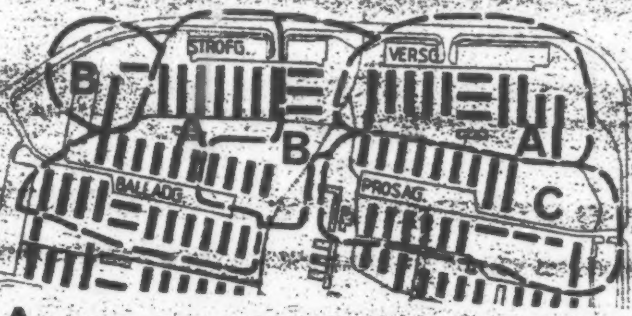
Möte om VivallaBil

Torsdagen den 17 mars kl 19.00 kommer det att bli ett möte om VivallaBil. Alla intresserade är välkomna att delta i mötet, vare sig Ni har anmält Ert intresse i förväg eller inte.

Dagarna före den 17 kommer fältkontoret att vara öppet såväl måndag, tisdag som onsdag, se månadskalendern på sista sidan av detta nummer av Projekt Vivalla-Nytt.

I ett särskilt flygblad berättar vi mer om såväl VivallaBil-utställningen som mötet om VivallaBil.

Har Du missat tidigare information om VivallaBil? Gå i så fall till OK i Vivalla centrum och få en broschyr eller gå till fältkontoret en tisdag eller en torsdag.



A Utförda fönsterbyten
B Fönsterbyte under våren 1983
C Fönsterbyte påbörjas sommaren 1983

Fönsterbyten

Många kommer till fältkontoret och frågar om de fönsterbyten som pågår i norra delen av Vivalla.

På kartan här kan Du se var det redan är klart, och var det kommer att ske under 1983. Vill Du veta mer kan Du vända Dig till Håkan Ström på Stiftelsen Hyresbostäder, [illegible]

TILLSAMMANS I VIVALLA

Man kan göra mycket tillsammans i Vivalla

Det är viktigt att alla får möjlighet att odla sina intressen. Ofta är det både roligare och mera praktiskt att göra saker tillsammans med andra. Men i Vivalla finns det kanske ingen förening som tar vara på just Dina intressen.

Här visar vi några idéer om saker som man skulle kunna göra tillsammans i Vivalla. Kanske är det något för Dig. Eller kanske Du har andra bra idéer. Hör av Dig till Projekt Vivalla. Vi kan hjälpa Dig att få kontakt med likasinnade och vi kan hjälpa till att lösa en del praktiska problem som att skaffa lokal.

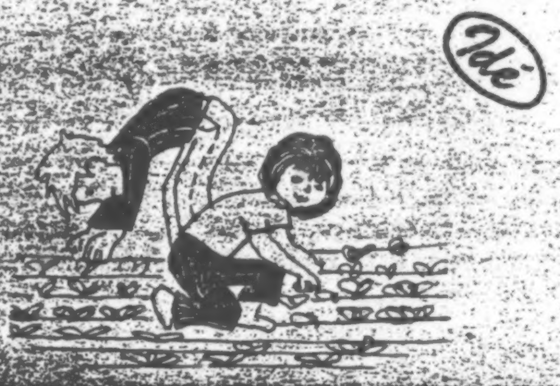
Bada bastu *—tillsammans*

Gillar Du att bada bastu? Har Du flera kompisar med samma intresse?

Det finns redan ett par bastuanläggningar i Vivalla. Med de kanske inte är öppna på de tider då Du och Dina kompisar vill basta. De kanske inte ligger på rätt ställe etc etc.

Kanske vill Ni ha Er egen bastu där Ni tar ansvar för skötsel och underhåll och där Ni badar bastu – tillsammans.

Hör av Er till oss i Projekt Vivalla. Ring eller besök fältkontoret, så ska vi försöka hjälpa Er att ordna ett ställe där Ni kan bada bastu.



Odla grönsaker *—tillsammans*

Har Du sett att vi har kallat till ett möte om odlingslotter? Var Du där? Vi vände oss då i första hand till enskilda vivallabor som ville ha en ruta att odla grönsaker eller blommor på.

Men det kanske skulle vara roligare att odla tillsammans med några andra? Fördelarna är många. Man kan turas om med semestern så att alltid någon är hemma och ser till att det växer och gror. Om man delar på kostnaden kan man kanske få råd med ett växthus till sina tomatodlingar.

Vore det här något för Dig?
Hör av Dig till Projekt Vivalla!

Några saker vi jobbar med:

VivallaBil

Många familjer i Vivalla har behov av bil. En del anser att behovet är så stort att de köper en bil. Andra vill eller kan inte satsa pengar i en bil.

Vi vill nu erbjuda alla att ha bil tillsammans i Vivalla.

Meningen är att man tillsammans i en förening äger bilar, som man disponerar mot att en milavgift betalas.

Vävstuga

Under förra året kom det vid några tillfällen vivallabor till oss och frågade om det inte gick att ordna en vävstuga i Vivalla. Idén lät bra. Det kan ju vara svårt att få plats med en vävstol hemma i lägenheten.

Under våren räknar vi med att vävstugan kommer igång. Den kommer att vara belägen i en av de nedlagda barnstugorna.

Bo i ett trapphus —*tillsammans*

Vi vet att många är trångbodda i Vivalla. Gäller det också för Dig och Dina grannar i trappuppgången? Eller känner Ni att Ni skulle vilja ha mer utrymme i alla fall?

Då kan Ni tillsammans hyra en lägenhet i trappuppgången nästa gång det blir någon ledig. I den lägenheten kan Ni träffas allihopa och umgås, spela spel, äta tillsammans, låta tillfälliga gäster bo i etc.

Kort sagt, i den här lägenheten kan Ni ha det trevligt tillsammans och få bättre utrymmen i den egna lägenheten.

Hör av Er till oss i Projekt Vivalla så skall vi [illegible] för Er hur [illegible]

Byta kläder —*tillsammans*

Det är många vivallabor som kommer till oss i fältkontoret. En del av dem har frågat om man inte kunde fixa en lokal där man kan träffas och byta kläder.

I Vivalla bor många barnfamiljer. Barnen växer snabbt ur sina kläder och förrådet av för små kläder ökar i garderoberna hemma. Det är inte så konstigt att flera kommit på tanken att man skulle träffas någonstans för att byta kläder.

Skulle DU vilja hjälpa till att ordna och sköta en sådan här "bytes-bix"? Hör av Dig till Projekt Vivalla!

Årets bild från Vivalla

Fototävling

Du glömmer väl inte bort fototävlingen som håller på under 1983? Det gäller att ta årets bästa bild med motiv från Vivalla. Så här är tävlingsreglerna:

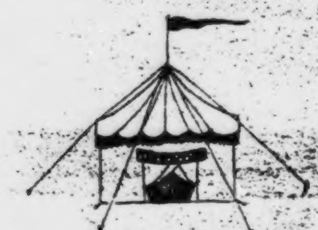
- Tävlingen är öppen för alla som bor eller arbetar i Vivalla.
- Två klasser, en för svart-vitt och en för färgkort (ej dia!)
- Format på inlämnade bilder: max. 13 x 18 cm.
- Sista dagen att lämna in sitt bidrag är den 15 november 1983. Tävlingsresultatet publiceras i början av december 1983.
- Bidragen skickas till Projekt Vivalla, Stadsbyggnadskontoret, Box 1425, 701 14 Örebro. Märk kuvertet: "Fototävling".
- Bidragen bedöms av en jury som består av informationschef Larsåke Larsson (Örebro kommun), Kenneth Johnsson (Brandförsvarets Fotoklubb) samt arbetsgruppen för Projekt Vivalla.
- Priser: I vardera klassen delas ut ett första och ett andra pris.
  1:a pris är ett presentkort på fotoartiklar för 500 kr.
  2:a pris är ett presentkort på fotoartiklar för 200 kr.
- De inlämnade förslagen kommer att visas i en fotoutställning i Vivalla.
- Projekt Vivalla har rätt att använda prisbelönta förslag för informationsverksamhet mm.
- Projekt Vivalla har rätt att köpa och använda obelönade bilder för 25 kr/st.

Ladda kameran och ställ in skärpan!

Mars '83

1	Tisdag	FÄLTKONTORET VivallaBil 11-14	9
2	Onsdag	LINJE 14 17.50 92,3 MHz	
3	Torsdag	FÄLTKONTORET VivallaBil 16-19	
4	Fredag		
5	Lördag		
6	Söndag		
7	Måndag		10
8	Tisdag	FÄLTKONTORET VivallaBil 11-14	
9	Onsdag	LINJE 14 17.50 92,3 MHz	
10	Torsdag	FÄLTKONTORET VivallaBil 16-19	
11	Fredag		
12	Lördag	VivallaBil UTSTÄLLNING 10-14	
13	Söndag		
14	Måndag	FÄLTKONTORET 16-19 VivallaBil	11
15	Tisdag	FÄLTKONTORET VivallaBil 11-14	
16	Onsdag	FÄLTKONTORET 16-19 VivallaBil LINJE 14 17.50 92,3 MHz	
17	Torsdag	FÄLTKONTORET 16-19 MÖTE OM VivallaBil 19	
18	Fredag		
19	Lördag		
20	Söndag		
21	Måndag		12
22	Tisdag	FÄLTKONTORET 11-14	
23	Onsdag	LINJE 14 17.50 92.3 MHz	
24	Torsdag	FÄLTKONTORET 16-19	
25	Fredag		
26	Lördag		
27	Söndag		
28	Måndag	Påsklovet börjar	13
29	Tisdag		
30	Onsdag	LINJE 14 17.50 92.3 MHz	
31	Torsdag		

Turteater i Vivalla



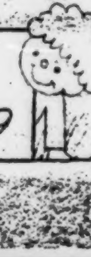
Första veckan i juni (V 22) kommer Turteatern från Värmland att spela Selma Lagerlöfs teaterstycke "Bortbytingen".

I Vivalla kommer man att ge 2 föreställningar. Dessa kommer att spelas i ett tält som rymmer ca 170 personer.

Under tiden som tältet inte används för teatern, får organisationer och andra intressenter använda tältet. Intresserade som vill använda tältet kan vända sig till Berndt Andersson, tel 14 03 60 eller Gunilla Axdorf, tel 10 95 56.

Fältkontoret tfn. 103978

Öppet tisdagar 11-14 torsdagar 16-19



Nästa nummer kommer om en månad

Välkommen till Örebro

Här kan du få information

TURISTBYRÅN, Örebro
Drottninggatan 7. Tel. 13 07 60
Öppet: Vard. 9 – 17, lörd. 9 – 12
15/6 – 31/8 förlängt öppethållande

TURISTINFORMATION, Svampen
Öppet: Maj – sept.

FRIDA I ÖREBRO LÄN Tel. 11 97 40

LARMTJÄNST, Örebro. Tel. 14 00 00

REGIONSJUKHUS (RSÖ). Tel. 11 90 40

POLISEN, Örebro. Tel. 11 93 20

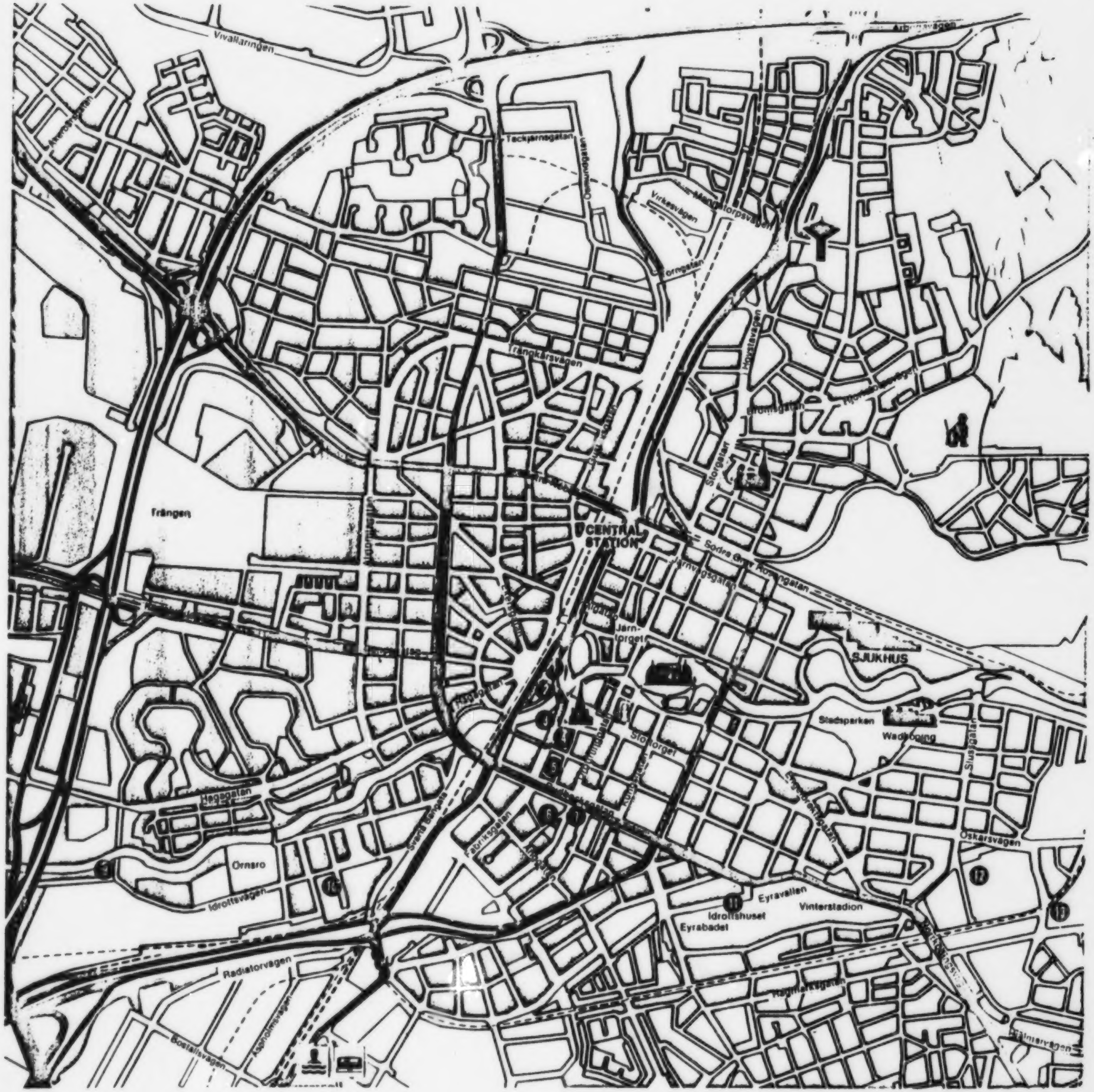
SOS TAG 90 000

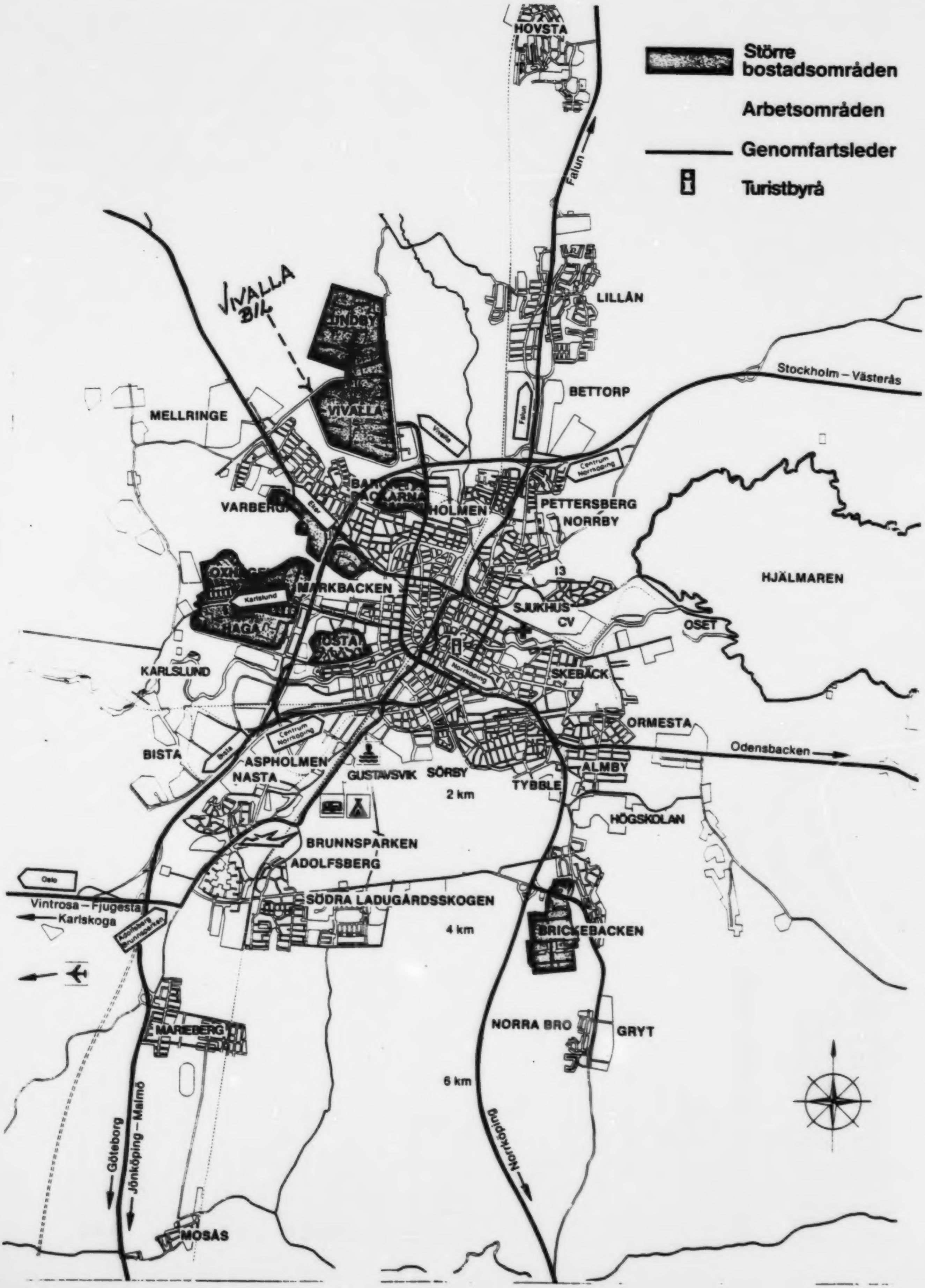
Ambulans, brandlarm, polislarm,
jourhavande läkare, präst, tandläkare.

ÖREBRO
KOMMUN

Besöksadresser:

- ❶ Nämndhuset, Vasastrand 11 – 13
  Stadskansli, drätselkontor, personalkontor m m
- ❷ Bostadsavdelning, Vasastrand 7
- ❸ Stadsbibliotek, Fabriksgatan 2
- ❹ Socialförvaltning, Fabriksgatan 5
- ❺ Brandförsvar, Rudbecksgatan 17
- ❻ Kulturnämndens kansli, Näbbtorgsgatan 12
  Medborgarhuset, Drottninggatan 42
- ❼ Stiftelsen Hyresbostäder, Drottninggatan 27
- ❽ Skolförvaltning, Tunnlandsgatan 3
- ❾ Industriverken, Örebro Kraftvärmeverk,
  Idrottsvägen 37
- ❿ Stadsbyggnadshusen,
  Abylundsgatan 8, Tomtagatan 9
  Fastighetskontor, gatukontor, industribyggnadsbolag, husbyggnadskontor, näringslivsavdelning,
  parkkontor, plankontor, stadsarkitektkontor,
  stadsingenjörskontor, utredningskontor
- ⓫ Fritidskontor, Eyragatan 1 A
- ⓬ Örebro Trafik AB, Borgargatan 1
- ⓭ Hälsovårdsförvaltning, djursjukhus,
  Ormestagatan 1




Större bostadsområden
Arbetsområden
Genomfartsleder
Turistbyrå
VIVALLA BIL
HOVSTA
Falun
LILLÅN
BETTORP
Stockholm – Västerås
MELLRINGE
LUNDBY
VIVALLA
Vivalla
Centrum Norrköping
BAROMETERN
BACKARNA
HOLMEN
PETTERSBERG
NORRBY
VARBERGA
OXHAGEN
MARKBACKEN
Karlslund
HAGA
ROSTA
I3
SJUKHUS
CV
HJÄLMAREN
OSET
KARLSLUND
SKEBÄCK
Norrköping
ORMESTA
Odensbacken
BISTA
Centrum Norrköping
Bista
ASPHOLMEN
NASTA
GUSTAVSVIK
SÖRBY
2 km
ALMBY
TYBBLE
HÖGSKOLAN
BRUNNSPARKEN
ADOLFSBERG
Oslo
Vintrosa – Fjugesta
Karlskoga
Adolfsberg Brunnsparken
SÖDRA LADUGÅRDSSKOGEN
4 km
BRICKEBACKEN
NORRA BRO
GRYT
MARIEBERG
6 km
Göteborg
Jönköping – Malmö
Norrköping
MOSÅS

APPENDIX D

SAMBIL

- SAMPLE MATERIALS -

Advertizing Pamphlet

Map of Vasteras

Dela bil som vi!

Den här informationen vänder sig till dig som tycker att det kostar onödigt mycket att ha bil i dag. Den vänder sig till dig som har bil och den vänder sig till dig som inte har bil men som gärna skulle vilja ha det ibland.

Informationen kommer från SAMBIL och har möjliggjorts av Transportrådet och Västerås kommun.

Vad är

Sambil innebär att Du som har bil hyr ut den när Du inte själv behöver den. Bilen kostar Dig ju en hel del även när den står på parkeringsplatsen.

Du som inte har bil har kanske inget stort körbehov. Men visst vore det praktiskt med bil ibland? För svamputflykten eller semesterresan till exempel. Då kan du hyra Sambil!

Varför Sambil?

Så här säger en bilägare:

"Jag tycker att jag använder bilen ganska lite och får höga fasta kostnader. Det är bra att sprida ut dem på en längre körsträcka."

Och en som hyr bil tycker:

"Man kan använda en bil till rimligt pris när man behöver den utan att behöva äga den. Lösa sina transportproblem utan att ha en egen bil."

Vad tjänar Du på Sambil?

Låt oss visa med ett exempel. Familjen Andersson har en Volvo 244, 1978 års modell. Den rullar 1 000 mil/år. Med hänsyn till värdeminskning, bränsle- och reparationskostnader, skatt och försäkring kostar varje mil ca 14:—. Familjen Andersson får en hyrare genom Sambil. Nu körs bilen i 1 250 mil/år och kostnaden sänks till 12:—. Kostnaden för familjen Andersson minskar med ca 2 000:—/år. Vad skulle det betyda i Ditt fall?

Avtalet är det speciella med Sambil

Ägare och hyrare har ett avtal som reglerar köravgifter, bilskötsel och hur man gör om olyckan är framme.

"I och med att det finns papper på det här så känns det liksom säkrare. Att allt är reglerat".

Sverker kör ca 3 500 mil i tjänsten varje år. Han hyr gärna ut sin bil under helgerna.

Ruth har en Volvo och har varit med i Sambil sedan 1980. Hon har haft två hyrare som nu tyvärr flyttat. Ruth hoppas få en ny hyrare.

BILEN SO
· EN ÄGER

Sambil?

Bilsamarbetet kan också leda till att man lär känna varandra. Man kan upptäcka att man har mer gemensamt.

Sambil finns sedan drygt två år i Västerås. Det är en fin idé tycker vi som är med. Sambil fungerar.

Ingegerd tycker det är dyrt med egen bil. Men ibland behöver hon och hennes dotter en bil. Då är Sambil bra.

Jan har ingen bil sedan några år. Det var för mycket besvär i förhållande till hur lite han använde den. Nu hyr han sin grannes bil för utflykter och andra resor.

EJ ÄR DYR. CH EN HYR.

Om olyckan är framme

Vem står för fiolerna vid en olycka? Bilägaren hålls självfallet ekonomiskt skadeslös. Det innebär att självrisk och eventuell bonusförlust utbetalas omedelbart.

Bilhyraren har en självrisk på 1 000:— vid vagnskada. Övriga kostnader täcks av Sambils skadefond till vilken bilhyrarna betalar en årlig avgift.

Så här börjar samarbetet

En "fadder" från Sambilföreningen hjälper Dig som är bilägare att finna någon som vill hyra Din bil när Du inte själv använder den.

Du som inte har bil får hjälp med att hitta en ägare som kan avvara sin bil för de tillfällen Du behöver den.

Ni skriver tillsammans ett avtal när ni kommit överens om hur ni vill ha bilsamarbetet. "Faddern" från Sambil är då med och ger råd.

Sambil är för många en ny erfarenhet. Så här tyckte en ägare att det kändes första gången:

"Det var som att låna ut sitt barn. Det var svårt. Men den är ju försäkrad så det är ju ingen fara egentligen."

Och en hyrare:

"Det var en fin upplevelse, en ny tillgång. Lite märkvärdigt kanske. Jag kände mitt ansvar också."

Kort om Sambil

SAMBIL heter egentligen Västerås Sambil Användare. Vi är en ideell förening. Vi vill verka för en samhällsekonomiskt riktig bilanvändning. Och en förnuftig inställning till bilen som fortskaffningsmedel både för nytto- och nöjesfärder.

Vår funktion är att sprida information om bilsamarbete, förmedla kontakter mellan intresserade parter, hjälpa till med upprättande av avtal, kostnadskalkyler och försäkringar. Vi har fullt utvecklade mallar och former för bilsamarbete. Där möjligheterna är många till individuella lösningar. Och anpassningar.

Vi hoppas naturligtvis att du inte genast slänger den här foldern utan att först tänka igenom din bilsituation. Eller ännu bättre. Skicka in svarstalongen nedan så får du veta mer om bilsamarbete!

SamBil
VÄSTERÅS SAMBIL ANVÄNDARE
BOX 8029 720 08 VÄSTERÅS

VLT-PRESS, V[illegible] 1983

- Klipp -

Det här vill jag veta mer om

Namn ....

Adress ....

Postnr .... Postadr. ....

Telefon ....

☐ Jag har bil

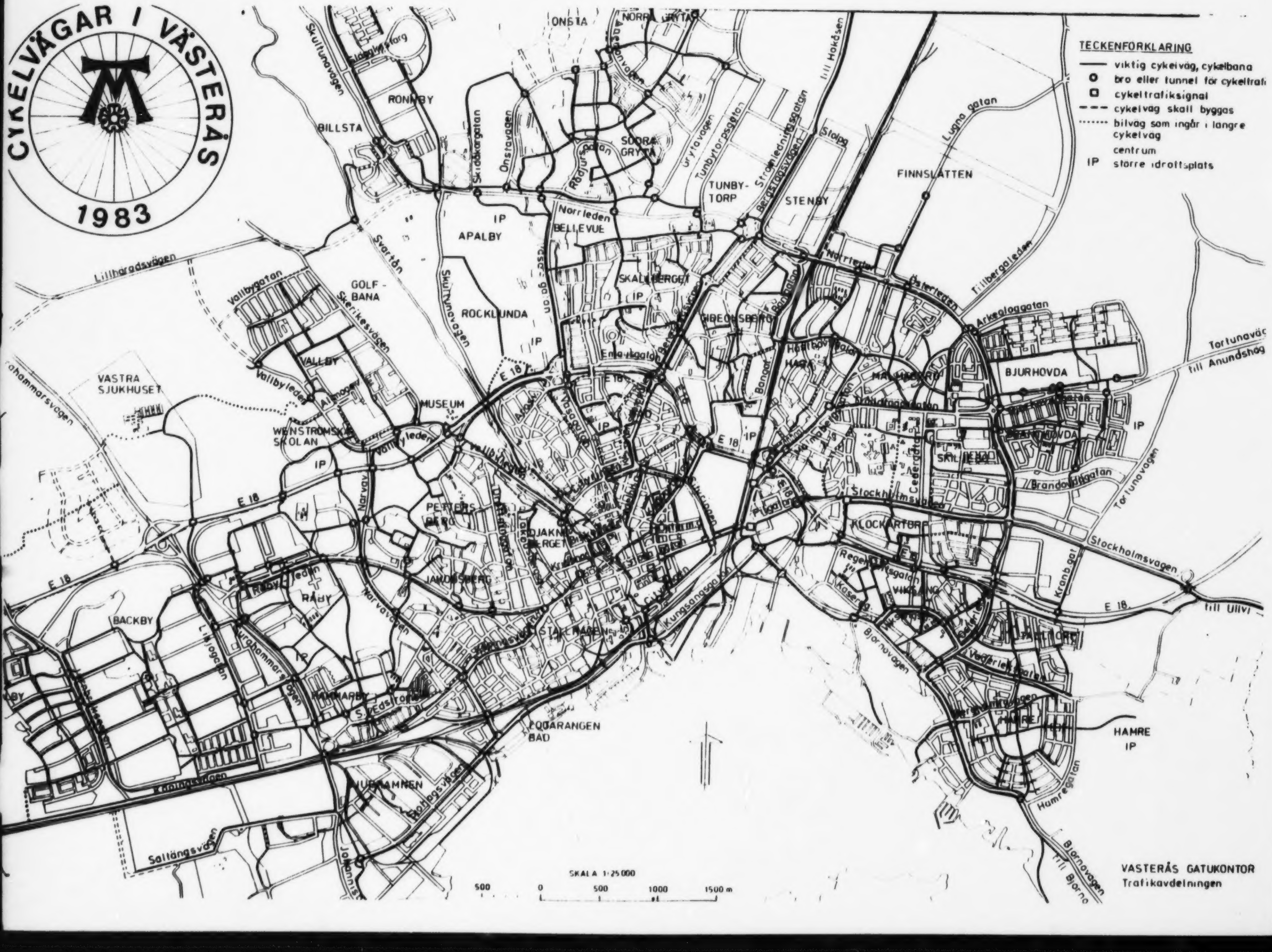
☐ Jag har inte bil

Frankeras
ej SAMBIL
betalar
portot

SamBil

Svarsförsändelse

Kontonummer 25 746 009


CYKELVÄGAR I VÄSTERÅS
1983
TECKENFÖRKLARING
viktig cykelväg, cykelbana
bro eller tunnel för cykeltrafi
cykeltrafiksignal
cykelväg skall byggas
bilväg som ingår i längre cykelväg
centrum
IP större idrottsplats
ONSTA
NORRA GRYTA
RONNBY
BILLSTA
SÖDRA GRYTA
TUNBY-TORP
STENBY
FINNSLÄTTEN
APALBY
BELLEVUE
SKALLBERGET
GOLF-BANA
ROCKLUNDA
VALLBY
VÄSTRA SJUKHUSET
MUSEUM
WENSTRÖMSKA SKOLAN
PETTERSBERG
DJÄKNEBERGET
JAKOBSBERG
RÅBY
BACKBY
HAMMARBY
STALLHAGEN
FREDRIKSBERG
MALMABERG
BJURHOVDA
SKILJEBO
KLOCKARTORP
VIKSÄNG
HAMRE
HAMRE IP
LÖGARÄNGEN BAD
JOHANNISBERG
IP
Skultunavägen
Onstavägen
Skiljebogatan
Norrleden
Rådjursgatan
Gryta vägen
Tunbytorpsgatan
Bergslagsvägen
Strömledningsgatan
Stålg
till Hökåsen
Lugna gatan
Tillbergaleden
Österleden
Arkeologgatan
Tortunavägen
till Anundshög
Brandöviksgatan
Stockholmsvägen
Krangbgat
till Ullvi
E 18
Svartån
Lillhärdsvägen
Vallbygatan
Skerikesvägen
Vallbyleden
Narvavägen
Emausgatan
Vasagatan
Bangatan
Kungsängsgatan
Regementsgatan
Kaserngatan
Björnövägen
Vedderleksgatan
Hamregatan
till Björnö
Råbyleden
Liljagatan
Surahammarsvägen
Hallstahammarsvägen
Sallängsvägen
Kopingsvägen
Hällagsvägen
S. Vedbogatan
SKALA 1:25 000
500 0 500 1000 1500 m
VÄSTERÅS GATUKONTOR
Trafikavdelningen

APPENDIX E

GREENCAR

- SAMPLE MATERIALS -

Format for Monthly Billings

Advertizing Pamphlet for Pay-drive Car Hire System

Pay-drive Meter Units

Map of Oxford

HARMONY VAN CO-OPERATIVE

JUNE 1982

USE OF VEHICLE:

Date	User	Mileage	Distance	Expense	Cost
JUNE 1	Philip/Vreni	67540 - 67765	225	petrol	15.00
JUNE 6	Jenny/Jon	67765 - 67770	5		
JUNE 7	Martin/Ros	67770 - 67819	49	petrol	5.00
JUNE 12	Martin/Ros	67819 - 67912	93	petrol	10.00
JUNE 16	Philip/Vreni	67912 - 67951	39		
JUNE 19	Jenny/Jon	67951 - 67967	16	petrol	9.00
JUNE 20	Jenny/Jon	67967 - 68066	99		
JUNE 22	Jenny/Jon	68066 - 68071	5		
JUNE 22	Philip/Vreni	68071 - 68079	8		
JUNE 23	Jonathan/Sarah	68079 - 68088	9		

INDIVIDUAL ACCOUNTS:

	Martin/Ros	Philip/Vreni	Jenny/Jon	Jonathan/Sarah
Miles this month	142	272	125	9
Balance b/f	-24.24	-31.09	-3.25	19.67
Paid in (out)				
Mileage charge	-17.04	-32.64	-15.00	-1.08
Less expenses	15.00	15.00	9.00	
Plus expenses				
Balance c/f	-26.28	-48.73	-9.25	18.59
	*	*		+

* Please pay Treasurer.
+ Do you want a refund?

FUND:

Balance b/f	153.97
Paid in	
Paid out	
Balance c/f	153.97

Guess at your typical weeks travel needs.
Can you and your friends have the paydrive car when you want it?
Is paydrive for you?

	SUN	MON	TUES	WED	THUR	FRI	SAT
Morning							
Afternoon							
Evening							

This is how much it costs

Minimum rental period 6 weeks.
You pay for petrol as used.

2 households

£7 per week per household.

A £25 refundable deposit per household. Plus 5p.per mile.

3 households

£5 per week per household.

A £20 refundable deposit per household. Plus 6p. per mile.

4 households

£4 per week per household.

£20 refundable deposit per household. Plus 6p. per mile.

For further details
ring LOWERENTAL, Swaffham 22287

PAYDRIVE

Rent-A-Car Long Term for as little as £4 a week plus mileage charge

Share it with your neighbours - using our pay-as-you-drive meter

PAYDRIVE-A new kind of car hire from

LOWERENTAL
Swaffham
Norfolk

Swaffham 22287

We all need a car sometimes - but one each can be expensive - so try paydrive - the shared hire car.

Housewives

Housewives - if you're left stranded when your husband takes the car to work - try paydrive.

Workers

Workers - if you can get to work by bus or bike and you want a car for the evenings and weekend - try paydrive.

Senior Citzens

Senior citizens - get out and about without the bother and expense of car ownership.

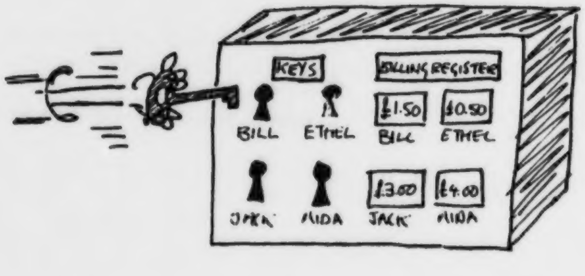
PAYDRIVE

Paydrive - Ford Escorts and Austin Mini's.
Paydrive - Cheaper than a new car.
Paydrive - more reliable than cheaper secondhand cars.

Here's how it works

**Get together with friends or neighbours to form a paydrive group. A "group" may be as small as two individuals or as large as four families.

**We will then station a car fitted with our PAY-AS-YOU-DRIVE meter for the exclusive use of your group for six weeks. Of course you can rent again after that.
**Each household gets a key to the paydrive meter. Insert the key to start the car and you are billed on the meter as you drive along.



Can several people share a car?

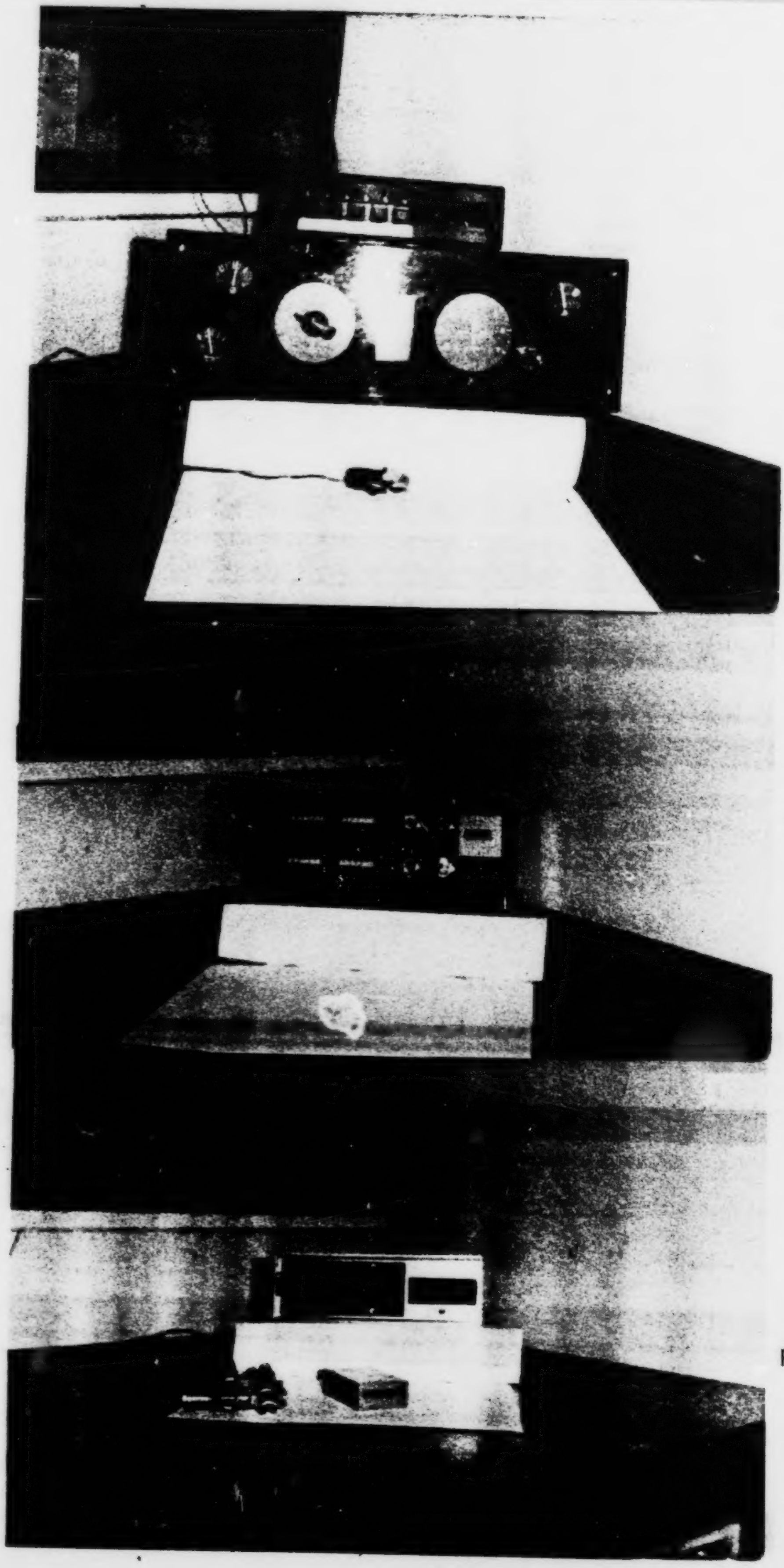
The success of paydrive depends on everyone not wanting the car at the same time. We find that by planning ahead - sometimes booking the car for essential trips - can solve a lot of problems. If the car is to be used for going to work decide who will regularly have it for work before hiring the Paydrive car. With your "group" try filling in a typical weeks travel needs (overleaf) to see if you can use Paydrive easily.

Who does the maintenance?

Lowerental will provide a fully maintained vehicle and will perform necessary maintenance every 6 weeks. But you are responsible for checking oil, water, air in the tyres - just like an ordinary motorist. Your car will have breakdown cover with the AA.

How do I pay for petrol?

Fill up as usual but enter your expenses in the dashboard log book. Share petrol bills among the members of your group in proportion to the paydrive meter bills - that is - in proportion to how far you drive.

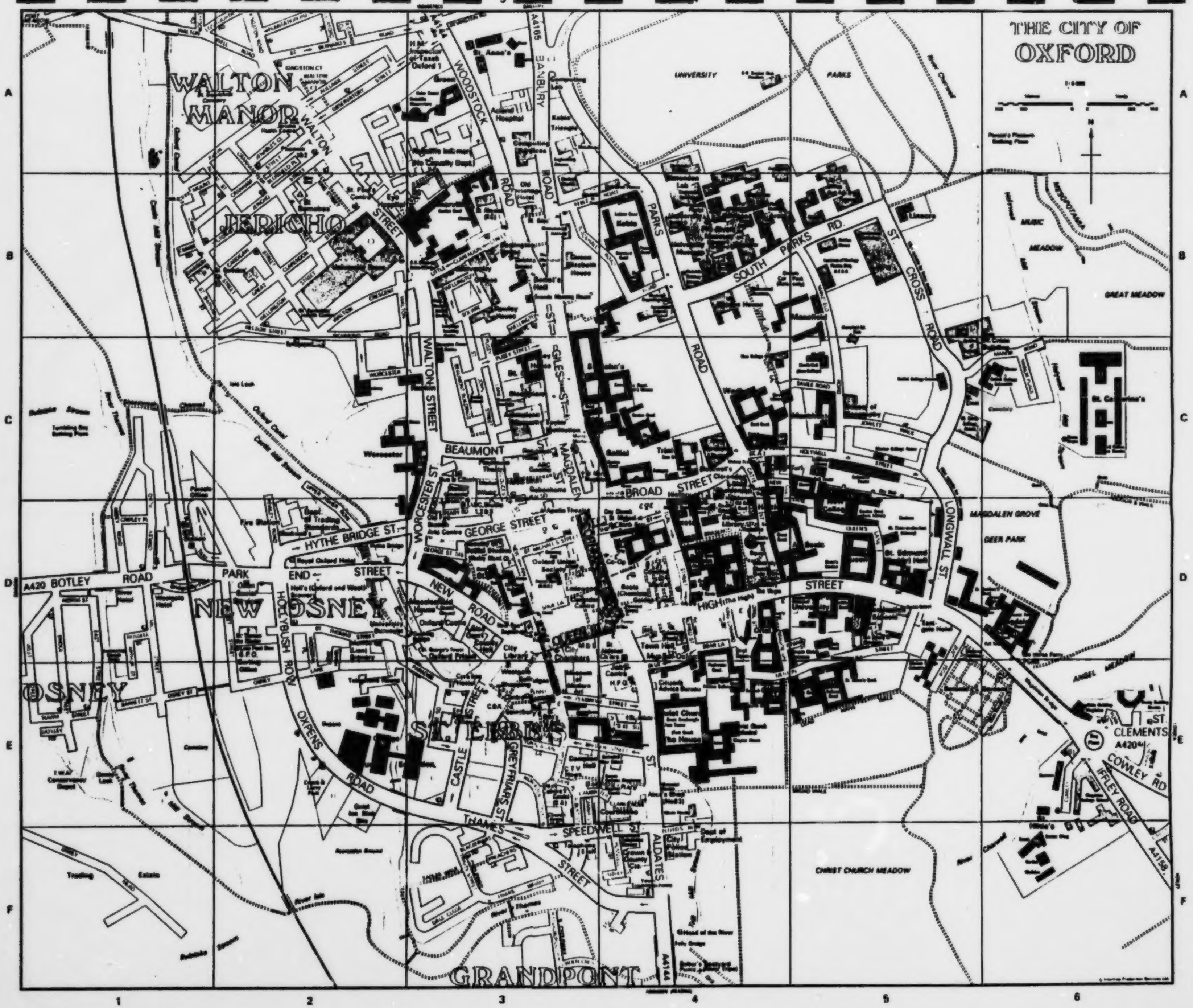


OUTRIDER

PUBLICAR 1

PUBLICAR 2

PAYDRIVE METERS


THE CITY OF
OXFORD
N
WALTON MANOR
JERICHO
NEW OSNEY
OSNEY
ST. EBBES
GRANDPONT
WOODSTOCK ROAD
BANBURY ROAD
A4165
WALTON STREET
WALTON
ST. GILES ST.
MAGDALEN ST.
BEAUMONT ST.
WORCESTER ST.
HYTHE BRIDGE ST.
GEORGE STREET
BROAD STREET
PARKS ROAD
SOUTH PARKS RD.
ST. CROSS ROAD
LONGWALL ST.
HIGH STREET
NEW ROAD
PARK END STREET
A420 BOTLEY ROAD
HOLLYBUSH ROW
OXPENS ROAD
CASTLE STREET
GREYFRIARS ST.
THAMES STREET
SPEEDWELL ST.
ST. ALDATES
A4144
ST. CLEMENTS
A4204
COWLEY RD
IFFLEY ROAD
A4158
UNIVERSITY PARKS
MAGDALEN GROVE
DEER PARK
GREAT MEADOW
ANGEL MEADOW
CHRIST CHURCH MEADOW
MESOPOTAMIA
Worcester
St. Catherine's
Keble
Trinity
Balliol
Christ Church
The House
1
2
3
4
5
6
A
B
C
D
E
F

APPENDIX F

MOBILITY ENTERPRISE

- SAMPLE MATERIALS -

Newsletter

Flow Chart for Data Acquisition System

Handbook for Participants

Trip Diary Handbook

Map of Purdue University Campus

mobility ability

Vol.1
No.1

PURDUE AUTOMOBILE PRODUCTIVITY PROJECT NEWSLETTER June 1982

Dear Friends:

This is the first issue of what we hope will become a regular feature of the Purdue Automobile Productivity Project (P.A.P.P.). The purpose of this newsletter is to keep those who have expressed an interest in our program informed as to our current work and future plans, as well as to serve as a clearinghouse of information regarding similar projects both here and abroad. To this end, regular features of the newsletter will include: (a) a clearinghouse column for readers interested in communicating with others in the field; (b) an annotated bibliography of current work of interest to those of us wedded to the idea of auto sharing and mini/micros; and (c) a "coming events" column which tracks meetings, presentations, etc., of interest to our joint readership. This effort will be successful in direct proportion to your feedback and participation.

As the various articles and features which follow indicate, our project is proceeding pretty much on schedule. We plan to have the initial experiment started in West Lafayette by September 1, with follow-on projects in the Indiana region and hopefully on the West Coast by the spring of 1983. Our fleet of mini/micros is growing and, like Noah, we are collecting them one by one in preparation for the deluge.

Let us hear from you so that we all can benefit.

Sincerely,

F.T. Sparrow
Project Manager

---

able to fulfill normal usage expectations of about 250 to 300 miles per tank full of gasoline.

The micro-mini car is viewed primarily as a multi-use vehicle, and this is seen in the proportion of respondents who would buy it to replace their current vehicle. Over half of those considering a micro-mini would use it as a replacement. The multi-use purposes that consumers perceive are also indicated by their preference for a four passenger configuration over the two passenger design. The margin of preference is about 5 to 1.

We have concluded there are four basic attributes or product capabilities that consumers perceive to be important in their consideration of micro-mini cars:

- Greater fuel economy than existing sub-compacts, at a somewhat lower price.
- The in-use feeling that the car is fun-to-drive or convenient/easy-to-drive.
- The performance that matches car size and available options, such as air conditioning and automatic transmission.
- Provisions for four-seat passenger capacity.

We expect the initial market from micro-minis will be for the sub-mini classification (overall length between 130" and 140". The models in this size category will be perceived as only slightly smaller than existing models, and the cars can be equipped with an engine (for example, with a 1000-1200 c.c. displacement) that can accommodate automatic transmission and air conditioning while furnishing the necessary performance.

The Purdue Research Team

To accommodate the interdisciplinary nature of the Purdue Automobile Productivity Project, an extremely diversified research team has been put together. The overall leadership/management is being provided by F.T. "Tom" Sparrow, with three area managers reporting to him:

F.R. Mason—responsible for the financial planning of the experiment, obtaining waivers for the initial vehicles, licensing, and insurance.

M.J. Doherty—responsible for overall management of consumer data, market research, etc.

W.G. Blom—responsible for the instrumentation of the mini/micro fleet, as well as the engineering design aspects of the experiment.

In addition, Professor R.K. Whitford will act as consultant to F.T. Sparrow and his team and participate in future simulation development.

Other Purdue professors who have contributed or are contributing to the experiment are:

Prof. K.C. Sinha—simulation
Prof. J.D. Fricker—optimization of shared fleet size and utilization, pricing of the enterprise
Prof. H.R. Potter—sociology of sharing
Prof. T.L. Snuggs—consumer response
Prof. P.S. McCarthy—demand analysis
Prof. A.T. McDonald—engines
Prof. C.R. Ferguson—engines
Prof. L.L. Ogborn—electrical instrumentation
Prof. R.A. Feinberg—consumer response

In addition to the research team, Purdue has been maintaining contact with interested parties from government, industry, and academia. At present these parties include:

1)Fleet owners such as rental car companies, leasing agents, and motor pool operators.

2)Automobile manufacturers, both foreign and domestic.

3)The market research firm, J.D. Power & Associates, will provide expertise in the areas of focus group interviews, attitudinal surveys, and market consulting. (The only market experiments performed to date on "mini/micro" autos were done by Power & Associates during 1980 and 1981.)

4)Other concerns such as automobile dealerships, cooperative groups, universities, etc.

One of the goals of this publication is to help facilitate communications between all of these groups.

What's New! Articles/Papers/Presentations

Cost of Vehicle Ownership

"Compact-car Driving Cost Put at 24.4 cents a Mile," *Automotive News*, April 12, 1982.

"Studies find Car Operating Costs," *Chicago Tribune*. April 4, 1982.

"Cost of Operating Compact Soars," *Automotive News*, March 8, 1982.

Mini/Micro Automobiles

"Honda Announces Hyper-Economy Runabout," *Automotive Engineering*, January, 1982.

"Honda's New Small Car Stars at Tokyo's Tantalizing Show," *Automotive News*, November 16, 1981.

Travel Behavior

Ardou, Aaron, "Perception of Travel Cost by Automobile to Work. Empirical Study in the San Francisco Bay Area." Presentation at the 61st Annual Meeting of the Transportation Research Board, January 1982.

Decker, W.W., Root, G.S., and McNally, M.G., "An Empirical Analysis of the Impact of Energy Restrictions on the Execution of Activity Patterns." Presentation to the 22nd Annual Meeting of the Transportation Research Forum, July 1981.

Hummon, N.P., and Burns, L.D., "Automobile Tours: How We Use Our Cars," Research Publication GMR-3771, General Motors Research Laboratory, June 1981.

Feedback/Input/ Questions

We welcome any input or information our readers would care to contribute. In addition, we are quite willing to act as a clearinghouse or sounding board for data and opinions. Please address all inquiries to:

Michael Doherty
304C Potter Building
Purdue University
West Lafayette, IN 47907

mobility ability
Purdue Automobile Productivity Project
Institute for Interdisciplinary Engineering Studies
Potter Center
Purdue University
West Lafayette, IN 47907

Non-profit Organization
U.S. Postage
PAID
Permit No. 221
Lafayette, Indiana

BULK RATE

The Mobility Enterprise Concept

> If four families owned eight (different) cars, they could have everything they'd need for any occasion.
>
> Andy Rooney
> *The Chicago Tribune*
> June 11, 1981

The "Mobility Enterprise" proposes that participants share a pool of special purpose vehicles, such as large sedans, mini-cars, trucks, recreational vehicles, etc. The purpose of the plan is to reduce the multi-purpose requirements of the family car(s). Research recently undertaken at Purdue University will determine how this concept might become a practical reality.

After years of promoting public transit and car pooling to conserve energy, planners and analysts have begun to recognize that consumers prefer the convenience of the personal automobile. At the same time, auto efficiency (fuel economy) has improved significantly while auto productivity has remained disturbingly low. Currently, the auto industry is concentrating on developing new designs aimed at improving fuel economy. These measures involve a conversion to front-wheel drive, use of lighter weight materials, and a continuation of vehicle "downsizing." But these improvements will be achieved at an ever-increasing cost.

The enterprise concept is based on better matching trip requirements to vehicle characteristics. Three interrelated features of a mobility enterprise—retained vehicle autonomy, easy access to an expanded fleet, and reduced expenditures—are the keys to its success. An enterprise member's minimum attribute vehicle (MAV) provides him, by definition, with the most economical means of accomplishing his most frequent trips. When a trip can be made in his own MAV, the member knows he can travel without delay. When a member's MAV is inappropriate for a desired trip, he must seek access to the appropriate special purpose vehicle. This process may involve delays if the vehicle is kept elsewhere. It may also involve some advance planning, paper work, and out-of-pocket costs, depending on the procedures of the enterprise. It is possible that the desired vehicle may not be immediately available because of a prior reservation. Such departures from guaranteed access and "instant gratification" are aspects of the mobility enterprise that must be offset by clear benefits. Such benefits appear to be possible, since the enterprise can offer several improvements: (1) a wider range of vehicles available for temporary use by an individual; (2) a less complex set of criteria in buying a car; (3) trip and ownership economies that can be translated into more disposable income or increased mobility; and (4) efficient use of society's scarce or expensive resources.

Possible Enterprise Structures

In a successful mobility enterprise, membership should enhance rather than limit the quality of individual mobility. Certain basic structures are suggested:

- **Diversified Rental Fleets:** Rental agencies add special purpose vehicles to their existing car/truck fleet to provide a full range of vehicles; offer streamlined discount reservation service to "enterprise card" holders.
- **Broker-Based Enterprise:** Existing rental companies or new organizations offer an enterprise management package; it can be assembled by broker on subscription or sign-up basis; "natural enterprises" (neighborhood or employee groups) can work out their own arrangements.
- **Enterprise-Controlled Broker Scheme:** A broker carries out administrative, storage, and maintenance functions under guidelines set by the enterprise; the enterprise may meet monthly to review rules and operations; the broker may have the right to advise on rules, renegotiate agreement, or insist financial liability be restricted to enterprise members.
- **Pure Enterprise:** Enterprise members (probably neighbors) carry out all functions internally through periodic meetings, rotating committees, etc.
- **Automobile Company Enterprise:** Auto manufacturers, working through their dealers, may consider the possiblity of selling *transportation* rather than just automobiles; each auto agency could sell or lease the personal MAV to enterprise members; the agency would provide and manage the special purpose fleet.

These five basic structures are a starting point. They begin the process of formulating and testing the operation of a mobility enterprise. Within a given structure, a variety of schemes can be devised to address questions of enterprise size, membership qualifications, fleet composition, scheduling, the reservation system, fees, financing, maintenance, pickup or delivery, insurance, and legal problems.

Micro-Mini Automobiles. What Are They?

At first mention they sound like something which one would need a microscope to view. To be sure it is a class of automobile that most Americans know nothing about. However, it is our belief that the micro-mini automobile is probably sufficient for most of the daily travel requirements faced by the average family, and thus, as a class seem to come very close to what we refer to as a minimum attribute vehicle (MAV).

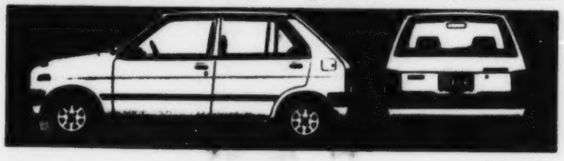
The purpose of this article is to more clearly define the micro-mini class and realistically examine the prospects for its appearance in the U.S. market in the near future.

This article is comprised of excerpts from "The Market Potential for Micro-Mini Cars in the United States," presented by John M. Hemphill, Executive Vice President, J.D. Power & Associates, at the 61st Annual Meeting of the Transportation Research Board, January 1982.

Car Class Sizes and Defining Micro-Minis

According to J.P. Power & Associates, by 1985 there will be a fundamental restructuring of size class segmentation. The current X-Body and K-Car class will be the standard size passenger car of 1985. Each class below the standard size will be proportionately smaller than the traditional definitions applied during the past two decades. Thus, it is almost certain that a newly defined "mini" class will emerge in the U.S. automotive market. This class will consist of passenger cars having a wheelbase under 90", going as small as perhaps 75", and having an overall lenght of under 140". This important development will evolve more easily than anticipated if the energy situation continues to drive up the cost of personal transportation.

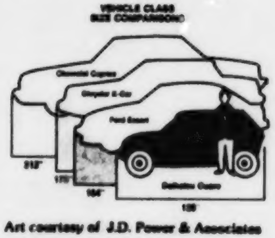
Wheelbase and overall length alone are not clear cut arbiters of market class or product class competition. There will be a great deal of confusion in the industry concerning the issue of appropriate class size definition. What appears to be a lack of consensus now will surely become more serious as down-sized models proliferate, and the mini class emerges. Two discernible categories, micro vehicles and mini vehicles, exist within the micro-mini class based on such factors as overall length, weight, and engine displacement (See table above). There are several vehicles currently being produced for non-U.S. markets that qualify as micro-mini cars, with the Japanese leading in the number and variety of models being offered. Each has four passenger capacity. Specifications for those models that fit this definition of micro-mini cars range from 76" to 90" in wheelbase, 123" to 139" in overall length, 1200 to 1650 pounds in curb weight, and 550 c.c. to 1250 c.c. in engine displacement.



Subaru Rex
Mini-Micro

EXAMPLES OF MICRO-MINI VEHICLES

		MPG (Est) City/Hwy.	Curb Weight (Lbs)	Wheel-base (Inches)
Sub-Mini (Length Between 130"–140")	BL Metro	31/41	1650	89
	Daihatsu Charade	40/55	1420	90
	Fiat Panda	28/41	1500	86
Micro-Mini (Length Under 130")	Daihatsu Cuore	45/60	1180	85
	Subaru Rex	45/60	1245	76
	Suzuki Alto	45/60	1200	85



Art courtesy of J.D. Power & Associates

Consumer Receptivity To Micro-Mini Cars

The central question is the U.S. consumer's receptivity to vehicles with these specifications. The Automotive Consumer Profile survey research shows that even in the subcompact car class, 50 percent of the owners say they want a "very" or "somewhat" more fuel efficient vehicle the next time they purchase. These owners anticipate that further downsizing will result in not only improved MPG, but also in lower purchase price. This should not be interpreted to mean that consumers do not want the options and accessories they have grown accustomed to on larger cars.

The potential demand for micro-minis should be considered in the context of the downsizing that has occurred, particularly during the past two years. For example, the number of passenger vehicles powered by a four-cylinder engine has increased by nearly 50 percent during this period. This is a dramatic shift in such a short period of time.

During the past two years, J.D. Power & Associates has been studying the question of consumer receptivity to micro-minis on a national scale. The question posed to consumers representative of the driving age population was:

"There is the possibility that in the next few years both import and domestic car makers may introduce micro-mini cars which are smaller than the current Honda Civic and Volkswagen Rabbit. Please indicate how likely you would be to purchase a new micro-mini car, if they were available the next time you purchased a car?"

Note that we did not bias the respondent by indicating, for example, that the micro-minis would be cheaper or give better gas mileage.

More than 20 percent of the driving age population responded that they would consider a micro-mini the next time they buy a car. This percentage could represent about 27 million American drivers.

The micro-mini car will be used much as existing compacts and subcompacts are used by their respective owner groups. Again, the strong preference for four-seat configuration reinforces this important finding. All indications are that, while commuting and errands will be the primary uses for micro-minis, they are not perceived as single or specialized use vehicles and must be

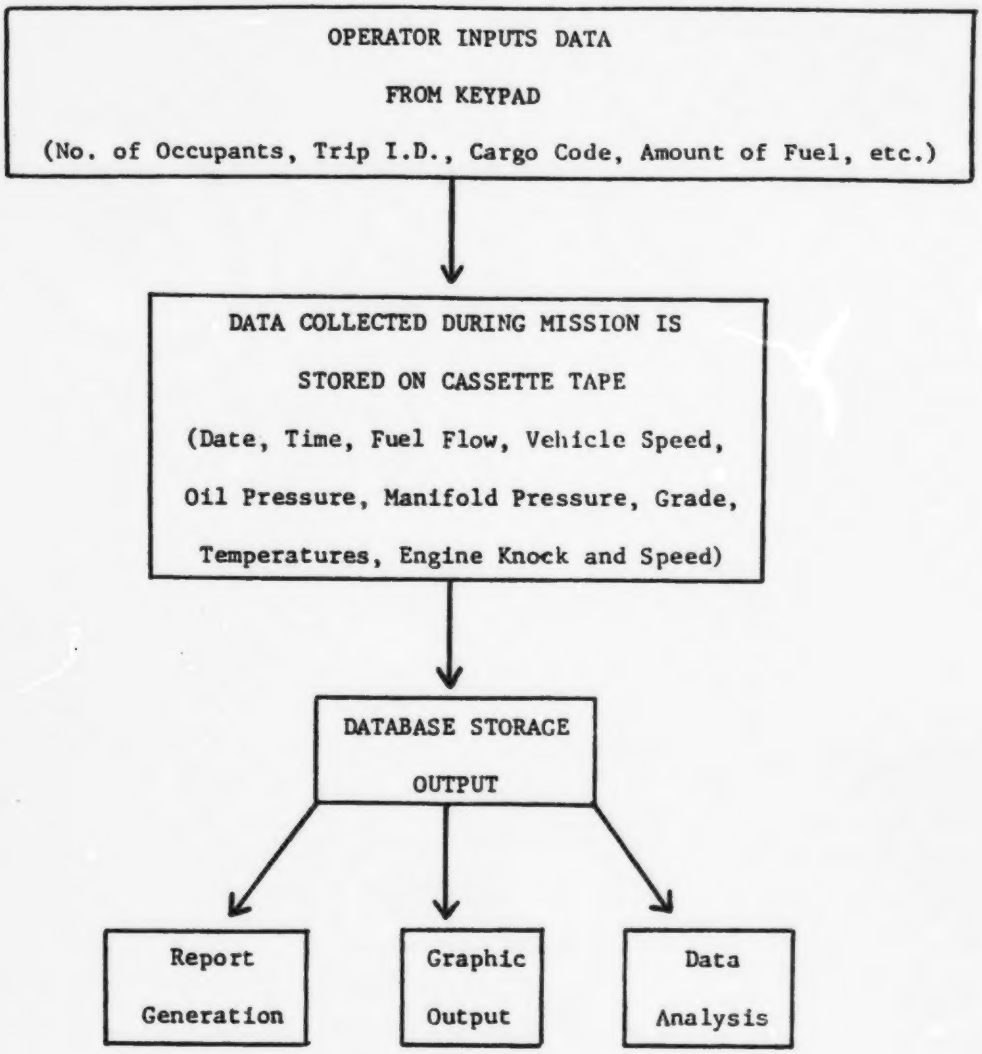

OPERATOR INPUTS DATA
FROM KEYPAD
(No. of Occupants, Trip I.D., Cargo Code, Amount of Fuel, etc.)
DATA COLLECTED DURING MISSION IS
STORED ON CASSETTE TAPE
(Date, Time, Fuel Flow, Vehicle Speed,
Oil Pressure, Manifold Pressure, Grade,
Temperatures, Engine Knock and Speed)
DATABASE STORAGE
OUTPUT
Report
Generation
Graphic
Output
Data
Analysis

Figure 2 Flowchart of Data Acquisition System

PURDUE AUTOMOBILE PRODUCTIVITY PROJECT

HANDBOOK FOR PARTICIPANTS

Compiled By

The Institute for Interdisciplinary Engineering Studies
Purdue University
West Lafayette, Indiana 47907

July 7, 1983

KEEP IN GLOVE COMPARTMENT OF YOUR CAR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR, NOISE AND RADIATION

Mr. Frank R. Mason
Program Administrator
Automotive Transportation Center
Purdue University
West Lafayette, Indiana 47907

Dear Mr. Mason:

This is in response to your letter of July 14, 1982, in which you requested an amendment to a testing exemption originally granted by this office on March 5, 1982. Specifically, you requested the inclusion of ten (10) additional light-duty vehicles.

The Memorandum of Exemption, effective March 5, 1982, is hereby amended to reflect the requested modification. Except for the number of vehicles covered by the exemption, now twenty (20), the terms and conditions of the original Memorandum remain in effect.

Very truly yours,

Timothy Fields, Jr.

Timothy Fields, Jr., Chief
Manufacturers Programs Branch
Manufacturers Operations Division
(EN-340)

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
WASHINGTON, D.C. 20590

AUG 5 1982

REFER TO:

NEF-32CVO

Frank R. Mason, Program Administrator
Purdue University
Institute for Interdisciplinary
Engineering Studies
A.A. Potter Engineering Center
West Lafayette, IN 47907

Dear Mr. Mason:

This is in response to your letter dated July 14, 1982, regarding the importation of 20 micro-mini vehicles versus the 10 you originally anticipated would be required for your research program.

This increase, in the number of vehicles you plan to import to improve the statistical significance of the sample, would still appear to fall within the bounds of the provisions of customs regulations, 19 CFR 12.80(b)(1)(vii) that we had previously forwarded.

As you were again reminded during your discussion with Mr. Clive Van Orden, a member of my staff, the National Highway Traffic Safety Administration does not issue formal approvals of test plans in advance of the importation of specific motor vehicles. When they are entered into the United States, a copy of your test plan should be attached to the declaration Form HS-7 if the vehicles do not fully conform to applicable Federal Motor Vehicle Safety Standards.

Again, best wishes for a successful program.

Sincerely,

Armstrong

Francis Armstrong
Director
Office of Vehicle Safety Compliance
Enforcement

It's a law we can live with.

POLICE INSPECTION

In the event you are detained in your vehicle by a police officer, be sure to show him the driver permission document, a copy of your lease agreement, and the vehicle registration. All these documents should be kept in the glove box of your mini/micro. The shared vehicle will have similar documents supplied with it. If you are in a rental car supplied to you as a shared vehicle, then show the officer your contract.

ACCIDENT PROCEDURE

1. Notify area police immediately - BEFORE leaving the scene of the accident.

2. Render non-medical assistance at the accident scene. For example: call ambulance, fire department, etc.

3. Exchange information with other driver(s):
    a. Driver's name, address, city, state and zip.
    b. Driver's license number and date of birth.
    c. License plate number, state and year.
    d. Make, model, year and color of other vehicle.

4. If there is an injury or a non-driveable vehicle, notify Transportation Service IMMEDIATELY. Call the Purdue Operator collect (day or night) at 317/494-4600; inform the operator of your situation. The call will then be transferred to the proper Transportation Service personnel. They will advise you as to the necessary procedure.

5. If the vehicle is driveable: a) continue your trip as planned; b) inform Transportation Service personnel as soon as possible, either upon your return or during the next business day, whichever comes first.

EMERGENCY REPAIR PROCEDURES

For Emergency Road Service Repairs, Etc.

I. If you are in a shared vehicle and more than 30 miles from Purdue:

1. For a minor repair - up to $100.00 - use either cash, personal check or credit card. Make sure you obtain a receipt. Reimbursement of personal expenditure will be handled upon notification of project staff.
2. For a major repair - over $100.00:
   - a. Call the Purdue Operator collect (day or night) at 317/494-4600; inform the operator of your situation. The call will then be transferred to the proper Transportation Service personnel.
   - b. Transportation service personnel will advise you as to the necessary procedure to repair or replace the disabled vehicle.

II. If you are in your mini/micro or a shared vehicle within 30 miles of Purdue:

1. During Transportation Service Department regular operating hours, call them directly (494-2114) and advise them of the problem.

2. If the problem occurs outside of regular operating hours, follow the same procedure as in 2a and 2b above.

TO: University Police

FROM: W. G. Blom, IIES

DATE: 1/22/83

SUBJECT: Research Project

Project Participant ______________________________

The above-named individual is a participant in an automobile productivity project being run by IIES. They currently have a ____________ parking permit and will need a ____________ pool permit issued for PRF vehicle #____________, serial # ____________, Indiana plate #____________.

Participants: If you have a pool sticker already, be sure to bring in your clip when you go to the police station to obtain your mini/micro sticker.

PERMISSION DOCUMENT

TO WHOM IT MAY CONCERN:

Effective 1/22/83

Project Participants ______________________________

____

The above-named individual(s) is/are research project participant(s) and is/are leasing this vehicle from Purdue Research Foundation. The participant(s) is/are therefore entitled to operate this vehicle:

Purdue University ID #______________________

Serial #______________________

IN Plate # 79G______________________

Wayne G. Blom
Project Manager
Institute for Interdisciplinary Engineering Studies
Purdue University
W. Lafayette, IN 47907 317/494-7000

HOW TO SCHEDULE MAINTENANCE FOR YOUR MINI/MICRO VEHICLE

The mileage on your mini/micro will be followed via the trip diaries you will be turning in. Make sure that you note your vehicle ID# (located in the windshield of each vehicle) on your trip diary forms. When your mini/micro has accumulated enough miles for a maintenance check, you will be notified to call the transportation services department (494-2114) and schedule your car for maintenance.

On the day scheduled, you should bring your mini/micro to the Transportation Services building, drop off your keys with the clerk on duty, making sure that they are aware of your maintenance appointment. You will then be given a car (either another mini/micro or a shared vehicle) for use for that day free of charge. Most maintenance jobs will take only one business day so usually you will pick up your mini/micro and turn in your loaner later that day. If service takes more than one day, you will be notified as to what procedure you should follow.

You are not to perform any mechanical work on your mini/micro's yourself and are NOT to add oil to your vehicle. If your vehicle is in need of oil, please contact either Transportation Services or the project staff.

As a member of the Mobility Enterprise, you are only responsible for cosmetic upkeep of the car and gasoline. If you are experiencing any difficulties with the car or suspect there may be a problem, please call either Transportation Services or the project staff.

HOW TO OBTAIN A SHARED VEHICLE

Use of vehicles from the shared fleet will be handled much like obtaining a vehicle from the Purdue fleet for university business. A member wishing to reserve a shared vehicle for a given day or days merely has to call Purdue Transportation Services Department (42114) and state that they would like to reserve a shared vehicle for the Mobility Enterprise experiments. The clerk at Transportation Services will then ask for your name, ID #, and date(s) of use. The car is then reserved for your use for those days, and you may pick up the car on the given day anytime after the first hour of operation during normal operating hours. At the time that you pick up the keys, you surrender the appropriate number of coupons to the clerk (the number depending on whether you reserve the car for a weekday or a weekend day and for how many days). Return of the shared vehicle may be accomplished in two ways. Members may either drop the keys to the shared vehicle in the drop box at the Transportation Services Building anytime OR they may return the keys to the clerk on duty during normal operating hours. In any event, the keys for the shared vehicle used MUST be returned no later than the first hour of operating hours on the day following use. For example, if a shared vehicle were picked up on Wednesday for one day's use, the keys could be picked up anytime after 8 a.m. on Wednesday and must be returned before 8 a.m. on Thursday. Shared vehicles returned late will be subject to a penalty amounting to an extra day's rental fee.

Transportation Service's operating hours are stated on your coupon. Feel free to leave your mini/micro parked at Transportation Services while you are using the shared vehicle, or you may park it at home.

You are responsible for filling the shared vehicle with gasoline before returning it to Transportation Services.

OBTAINING A RENTAL CAR WHEN MOBILITY ENTERPRISE SHARED VEHICLES ARE UNAVAILABLE

If there is no shared vehicle available on the day(s) you would like to use it, you are allowed to rent a vehicle from one of the rental car agencies located at the Purdue airport. When obtaining a car from a rental car agency you are acting as an individual since there are no special agreements or "standing orders" for Mobility Enterprise members in effect with the rental firms.

The Mobility Enterprise organization will reimburse you for the rental fees incurred in obtaining a Ford Fairmont or similar vehicle. There are two things that you must do in order to use this system.

1) Make sure you inform the rental agency you are a Purdue employee which makes you eligible for special rates;

2) Accept all insurance coverage offered in the standard contract offered to you by the rental agency; and,

3) After returning the car to the agency send the receipts and the correct number of coupons needed for the days used to:

Michael Doherty
304C Potter

One final note: It is suggested that you use a major credit card in your dealings with the rental car agency.

PURDUE AUTOMOBILE PRODUCTIVITY PROJECT

TRIP DIARY HANDBOOK

For use by trip diary participants

Compiled by

The Institute for Interdisciplinary Engineering Studies
Purdue University
West Lafayette, Indiana 47907

Instructions for Filling Out the Trip Diary

START MILEAGE:	For the first page of the trip diary, this will be your current odometer reading (round off the 10ths). For subsequent pages, it should match the last mileage entry on the previous page. This will help us keep the pages in order.
DATE (IF NEW):	On the first trip of each day, enter the current date in this column. This entry need not be made again until the next day.
TRIP TYPE CODE:	There are 9 possible trip types listed on the right-hand side of the trip diary sheet. Simply enter the appropriate numeric code for each trip. A trip is considered to be from engine on to engine off OR until some other condition changes (i.e., picking up or dropping off a person).

Trip Codes

1. Grocery Shopping - means trip to the grocery store, no matter where the trip originates (i.e., a stop at the grocery store on the way home from work is a grocery shopping trip).

2. Non-Grocery Shopping - self-explanatory.

3. Commute to work/school - includes only trips to work or school. Also could include trips to a place of volunteer work (e.g., hospital for hospital volunteers).

4. Passenger Ferry - includes all trips where the purpose is to pick someone up or drop someone off.

5. Recreation/Social - includes visits to friends, trips to restaurants or movies, etc.

6. Errands - this type of trip is slightly different from a shopping trip. It could include such trips as to the dry cleaners, to pay a bill, to pick up a catalog order, etc.

7. Continue Previous Trip - this code simplifies your trip diary. If your next trip is identical in all respects to the last one (i.e., number of passengers, cargo, etc.) simply enter a 7 and nothing more. Example: a shopping trip which entails going to several different stores in search of a particular item.

8. Return Home - includes all trips where your home is the final destination.

9. Vacation - Use this code when using the car as part of a vacation trip. While on vacation merely make one (1) entry per day.

One final note on choosing codes - don't agonize over what type of trip you are taking. If a trip has more than one purpose, choose the one that you feel is the main purpose.

NUMBER OF OCCUPANTS: This is the total number of riders including the driver.

CARGO CODE: Make a cargo code entry in this column according to the following definitions:

0 - none - normal personal belongings (purses, briefcases) and passengers only.

1 - some - includes additional cargo, but not filling the trunk or back seat. Example: 1 suitcase or 1 bag of groceries.

2 - trunk OR back seat full. In this case, consider it full if more than half of the capacity is used.

3 - truck AND back seat full. This includes trips where cargo cannot fit into the trunk or back seat and both must be used.

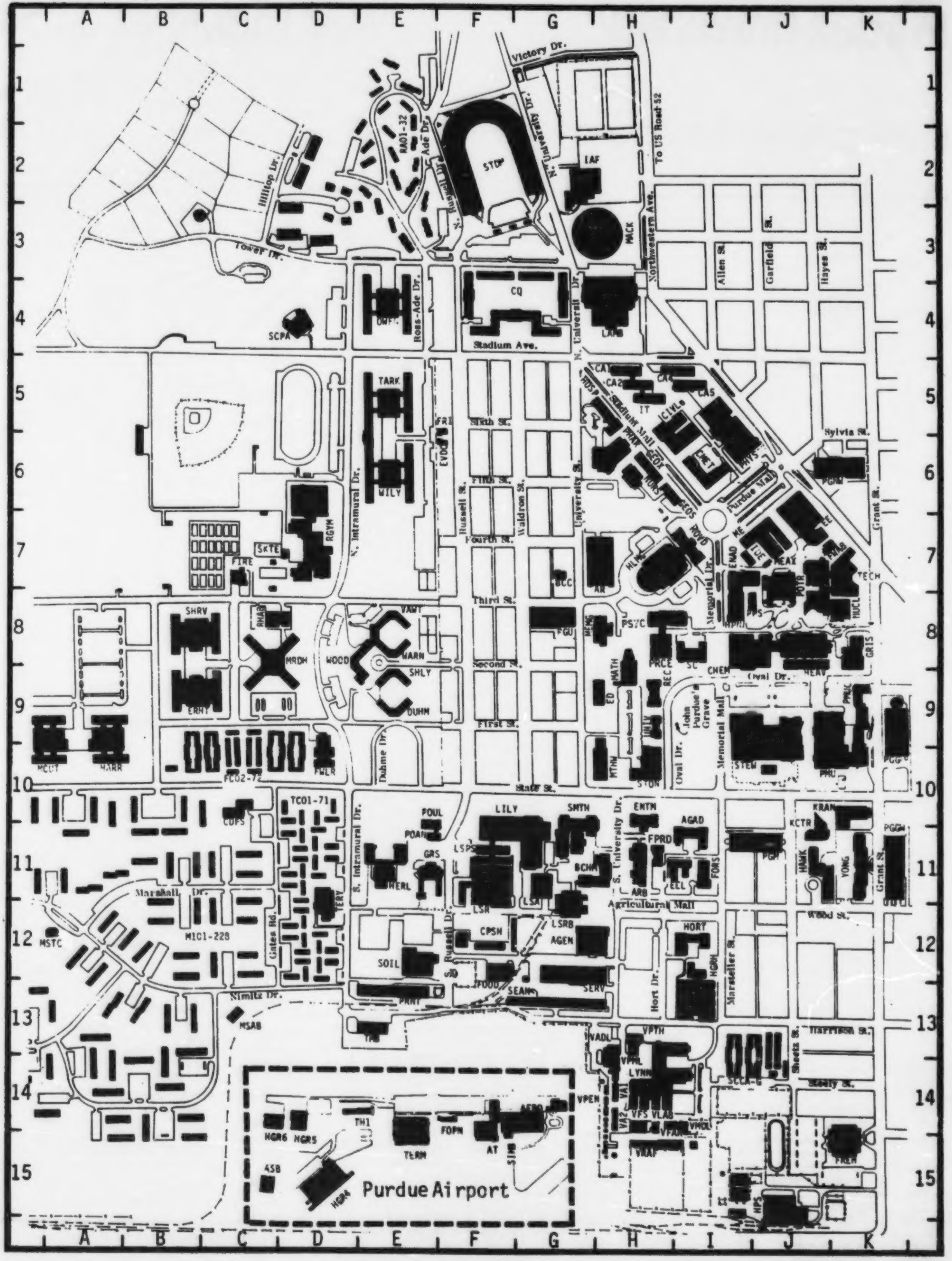
SATISFACTION INDEX: This refers to how well you feel the vehicle you drove fulfilled the requirements of the trip. For example, 8 passengers in a 4 passenger car would probably rate a 1 (very unsatisfactory). Also include mechanical problems - if you had a breakdown, you probably wouldn't rate the vehicle very satisfactory for that particular trip.

END MILEAGE: Record your odometer reading at the end of that particular trip. Once again, round off fractions.

GASOLINE: In the upper right-hand corner of the trip diary is a box for recording information of each time you fill up with gasoline. The Car I.D. column is to be used if you are keeping diaries for two or more cars in order to establish which vehicle you purchased gasoline for. Then simply mark down the present odometer reading, number of gallons purchased, and the total price.

Purdue University

West Lafayette Campus



Purdue University West Lafayette Campus

Building Abbreviations and Names

Abbr.	Name and Reference
*AEMS	Agricultural Engineering Machine Storage Building
AERO	Aerospace Science Laboratory G-14
AGAD	Agricultural Administration Building I-10
AGEN	Agricultural Engineering Building G-12
*AIDC	Agricultural Information Distribution Center
AR	Armory H-7
ARB	Agricultural Research Building H-11
ASB	Airport Service Building C-15
AT	Aviation Technology Building F-14
BCC	Black Cultural Center G-7
BCHM	Biochemistry Building H-11
CA1	Creative Arts Building 1 H-4
CA2	Creative Arts Building 2 H-4
CA4	Creative Arts Building 4 I-4
CA5	Creative Arts Building 5 I-4
CDFS	Child Development and Family Studies Building C-10
**CHAF	Chaffee Hall
CHEM	Chemistry Building I-8
*CIMD	Center for Information and Numerical Data Analysis and Synthesis
CIVL	Civil Engineering Building I-5
CMET	Chemical and Metallurgical Engineering Building I-5
CPSH	Car Pool Shelter F-11
CQ	Cary (Franklin Levering) Quadrangle G-3
+DUHM	Duhme (Ophelia) Residence Hall E-9
ED	Education Building G-8
EE	Electrical Engineering Building J-6
EEL	Entomology Environmental Laboratory I-11
ENAD	Engineering Administration Building I-7
ENTM	Entomology Hall H-10
ERHT	Earhart (Amelia) Residence Hall C-8
EVDC	Environmental Design Center (523 Russell Street) F-5
FC02-72	Fowler (James M.) Courts (even numbers) B, C, D-9
FIRE	Fire Station C-7
*FLX1	Flexible Laboratory 1 (at Purdue Research Park, 1220 Potter Drive)
*FLX2	Flexible Laboratory 2 (at Purdue Research Park, 1291 Cumberland Avenue)
FOOD	Food Stores Building F-12
FOPN	Flight Operations Building F-14
FORS	Forestry Building I-11
FPRD	Forest Products Building H-10
FREH	Freehafer (Lytle J.) Hall of Administrative Services K-14
FRI	Family Research Institute (525 Russell Street) F-5
FWA8	Federal Works Administration Building 8 K-7
FWLR	Fowler (Harriet O. and James M., Jr.) Memorial House D-9
GEOS	Geosciences Building H-6
GEOX	Geosciences Annex H-6
*GOLF	Golf Starter House (Cherry Lane)
GRIS	Grissom Hall K-8
GRS	Grounds Service Building E-11
HARR	Harrison (Benjamin) Residence Hall B-9
HAWK	Hawkins (George A.) Graduate House J-10, 11
HEAV	Heavilon Hall J-8
HERL	Herrick Laboratories E-10, 11
HGRH	Horticulture Greenhouses I-12
HGR4	Hangar Number 4 D-15
HGR5	Hangar Number 5 D-14
HGR6	Hangar Number 6 C-14
HLMC	Hall of Music, Edward C. Elliott H-7
HORT	Horticulture Building I-11
HOSP	Hospital, Purdue University Student H-5
HOVD	Hovde (Frederick L.) Hall of Administration I-6
HPN	Heating and Power Plant-North I-7
HPS	Heating and Power Plant-South J-15
IAF	Intercollegiate Athletic Facility G-2
IDE	Interdisciplinary Engineering Building I-7
IT	Industrial Technology Building H-4
KCTR	Krannert Center for Executive Education and Research K-10
KRAN	Krannert Building K-10
LAMB	Lambert (Ward L.) Fieldhouse and Gymnasium H-3
	Library (located in Stewart Center)
LILY	Lilly Hall of Life Sciences F, G-10
LSA	Life Science Animal Building G-11
LSPS	Life Science Plant and Soils Laboratory F-10
LSR	Life Science Ranges (Greenhouse and Service Building) F-11
#LSRB	Life Science Research Building G-12
LYNN	Lynn (Charles J.) Hall of Veterinary Medicine H, I-13
M101-228	Married Student Courts A, B, C-10, 11, 12
MACK	Mackey (Guy J.) Arena H-2, 3
MATH	Mathematical Sciences Building H-8
MCUT	McCutcheon (John T.) Residence Hall A-9
ME	Mechanical Engineering Building J-6
MEAX	Mechanical Engineering Annex J-7
MENG	Memorial Gymnasium H-7, 8
MGL	Michael Golden Engineering Laboratories and Shops K-7
MSTC	Married Student Tenant Council Building A-12
MRDH	Meredith (Virginia C.) Residence Hall C-8
MSAB	Married Student Housing Administration Building C-13
MTHW	Matthews (Mary L.) Hall H-9
NUCL	Nuclear Engineering Building K-7
NURS	Nursing and Allied Health Sciences Building H-5
OWEN	Owen (Richard) Residence Hall E-3
PGG	Parking Garage, Grant Street K-9
PGGW	Parking Garage, Grant and Wood Streets K-11
PGM	Parking Garage, Marsteller Street I-10
PGNW	Parking Garage, Northwestern Avenue K-5
PGU	Parking Garage, University Street G-7
PHAR	Pharmacy Building H-5
PHYS	Physics Building I-5
PMU	Purdue Memorial Union J-9
PMUC	Purdue Memorial Union Club K-9
POAN	Poultry Science Annex E-10
POTR	Potter (A. A.) Engineering Center J-7
POUL	Poultry Science Building E-10
PPS	Physical Plant Garage and Storage Building J-7
PRCE	Peirce Hall H-8
PRNT	Printing Services Building E-12
PSYC	Psychological Sciences Building H-7
RA01-32	Ross-Ade Student Apartments C, D, E-1, 2
REC	Recitation Building H-8
RGYM	Recreational Gymnasium D-6, 7
RHAB	Residence Halls Administration Building C-7
SC	Stanley Coulter Hall I-8
SCCA-G	South Campus Courts, Buildings A through G I, J-13
SCPA	Slayter Center of Performing Arts D-4
SEAN	Service Building Annex G-12
SERV	Service Building G-12
+SHLY	Shealy (Frances M.) Residence Hall E-8
SHRV	Shreve (Eleanor B.) Residence Hall C-7, 8
SIMB	Simulator Building G-14
SKTE	Skate House at Recreational Gymnasium C-6
SMTH	Smith Hall G-10
SOIL	Soil Erosion Laboratory, National E-12
*SSWO	Service and Salvage Office (North Ninth Street Road)
*SSW1-6	Service and Salvage Warehouses 1 through 6 (North Ninth Street Road)
STDM	Ross-Ade Stadium F-12
STEW	Stewart Center I, J-9
STON	Stone (Winthrop E.) Hall H-9
TARK	Tarkington (Newton Booth) Residence Hall E-4, 5
TC01-71	Terry (Oliver P.) Courts (odd numbers) D-10, 11, 12
#TECH	Technology Building K-7
TERM	Terminal Building E-14
TERY	Terry (Oliver P.) House D-11
TH1-5	Tee-Hangars 1 through 5 (*TH2-5) D-14
TMB	Transportation Maintenance Building E-13
*TRNS	Transmitter Building, WBAA Radio (South Ninth Street)
**TSP1	Combustion Research Laboratory
**TSP2	Gas Dynamics Research Laboratory
**TSP3	High Pressure Research Laboratory
**TSP4	Propulsion Research Laboratory
**TSP5	Turbomachinery Fluid Dynamics Laboratory
UNIV	University Hall H-9
VA1	Veterinary Animal Isolation Building 1 H-13
VA2	Veterinary Animal Isolation Building 2 H-14
VADL	Veterinary Animal Disease Diagnostic Laboratory H-13
+VAWT	Vawter (Everett B.) Residence Hall E-7
VFAR	Veterinary Farriery H-14
VFS	Veterinary Feed Storage Building H-14
VLAB	Veterinary Laboratory Animal Building H-14
VLAS	Veterinary Laboratory Animal Storage Building I-15
VMDL	Veterinary Metabolic Disease Laboratory I-14
VPEN	Veterinary Research Animal Pens G-13
VPML	Veterinary Postmortem Laboratory H-13
VPTH	Veterinary Pathology Building H-13
VRAF	Veterinary Research Animal Facility H-14
+WARN	Warren (Martha E. and Eugene K.) Residence Hall E-8
*WEST	Westwood (President's Home)
WILY	Wiley (Harvey W.) Residence Hall E-6
+WOOD	Wood (Elizabeth G. and William R.) Residence Hall D-8
YONG	Young (Ernest C.) Graduate House K-10, 11

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*Buildings not appearing on map
#Buildings under construction
+Windsor Residence Halls
**Part of Thermal Sciences and Propulsion Center (does not appear on map)

2/84

APPENDIX G

STAR

- SAMPLE MATERIALS -

Application Form

Introductory Certificate

Quick Check-in Envelope

Rental Record Form

Promotional Flyer

Map of STAR Location in San Francisco

STAR★ CLUB
19 Higuera Street
San Francisco, CA 94132
(415) 585-5910

APPLICATION

NAME ____ CAL D.L.# ____ BIRTHDATE ____ EXP ____

ADDRESS. ____ CITY ____ STATE ____ ZIP ____

SOCIAL SECURITY# ____ PHONE # ____

EMPLOYER ____ PHONE # ____

ADDRESS ____ CITY ____ STATE ____ ZIP ____

CREDIT REFERENCES:

ACCOUNT # ____ TYPE ____ PHONE # ____

COMPANY ____ ADDRESS ____

ACCOUNT # ____ TYPE ____ PHONE # ____

COMPANY ____ ADDRESS ____

ACCOUNT # ____ TYPE ____ PHONE # ____

COMPANY ____ ADDRESS ____

BANK

CK ACCT # ____ BANK ____ ATTN: ____

ADDRESS ____ CITY ____ STATE ____ ZIP ____

SV ACCT # ____ BANK ____ ATTN: ____

ADDRESS ____ CITY ____ STATE ____ ZIP ____

OTHERS AUTHORIZED TO CHARGE ON THIS ACCOUNT

NAME ____ CAL D.L.# ____

NAME ____ CAL D.L.# ____

NAME ____ CAL D.L.# ____

PRESENT CARS:

YEAR ____ MAKE ____ MODEL ____ STYLE ____ TYPE ____

YEAR ____ MAKE ____ MODEL ____ STYLE ____ TYPE ____

REMARKS:

____

STAR USE ONLY

1 2 3 4 5 6 7

INTRODUCTORY CERTIFICATE

This certificate entitles the bearer, a new resident at Parkmerced, to an introductory, one-day free auto rental or truck rental from:

The STAR★ Company
(at Parkmerced)
19 Higuera Ave.
585-5910

Call now for reservations. 100 free miles; gas not included.

Renter Signature
(indicating certificate
was used)

☆
INTRODUCTORY OFFER
COURTESY
OF
PARKMERCED

Ernest Johnson
STAR Company

STAR★ 19 Higuera St.SF, (415) 585-5910

TRIP TICKET

CAR #	MAKE / TYPE / LICENSE

Mileage IN ____________

Mileage OUT ____________

____ HOURS ____ MINUTES	@ 1¢ =	▨
____ DAYS	▨	@ $5 =
RENTAL		
PICK UP		
DROP OFF		
+ ______ MILES	@ 14¢ =. (includes fuel)	@ 10¢ = (replace fuel)
SUB TOTAL		
TAX		
GAS	▨	
Yes / CDW / No	15%	$2/DAY
TOTAL BILL		

WILL RETURN:

SIG. x ____________________ #

TIME STAMP HERE

① MILEAGE IN ____________________

② Mark Gas Level Like This

(Sample Gauge) E 1/2 F

② Your Gauge E 1/2 F

③ **PLACE KEYS INSIDE THIS ENVELOPE**

Thank You

QUICK CHECK-IN

STAR★

YOUR BILL (TRIP TICKET) WILL BE COMPUTED FROM THIS INFORMATION.

STAR

REPORT OF THE FIRST 100 DAYS

We seem to be succeeding! We now have 200 Parkmercedians signed up as club members; we have 50 cars; have been a national news event — on 3 TV shows, 6 radio shows, in 50 newspapers.

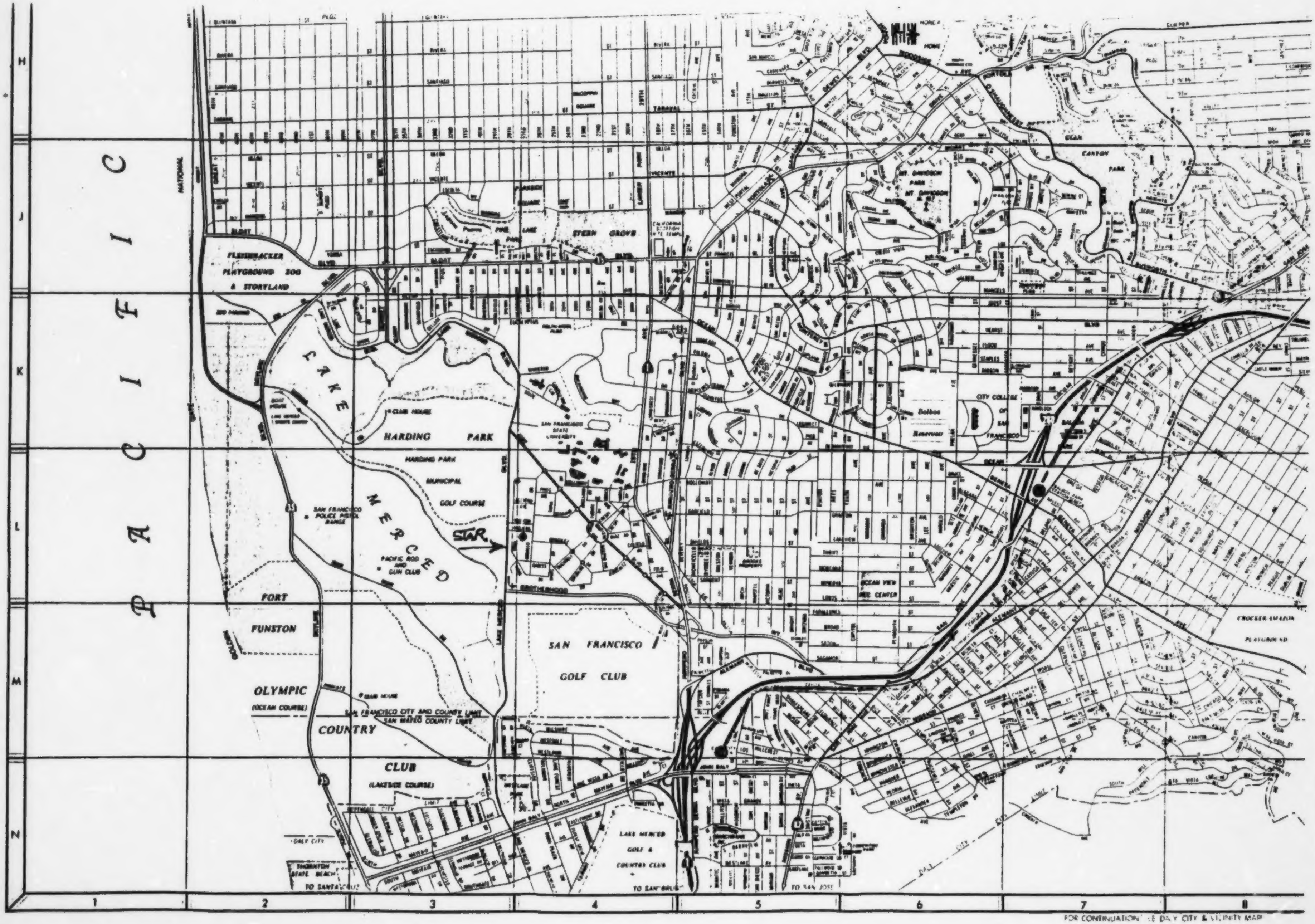
Our first-of-a-kind, Short Term Auto Renting allows you to live here and not own a car, certainly not own a second car. Great for emergencies, visitors from the east, etc.

You merely join the club, check out a car of your choice (takes 60 seconds), and take a 20-minute or 20-day trip.

Recently a lady took a very short shopping trip and the bill was 50¢. A weekend, 36 hour trip costs about $25. All by credit; you get an itemized bill at the end of the month. Yes, we have a truck for you.

Call
585-5910

The STAR Company
19 Higuera (Main Garage)
at Parkmerced


PACIFIC
FLEISHHACKER PLAYGROUND ZOO & STORYLAND
STERN GROVE
PINE LAKE
LAKE MERCED
HARDING PARK
HARDING PARK MUNICIPAL GOLF COURSE
CLUB HOUSE
SAN FRANCISCO POLICE PISTOL RANGE
PACIFIC ROD AND GUN CLUB
STAR
SAN FRANCISCO STATE UNIVERSITY
FORT FUNSTON
OLYMPIC (OCEAN COURSE)
COUNTRY CLUB (LAKESIDE COURSE)
SAN FRANCISCO CITY AND COUNTY LIMIT
SAN MATEO COUNTY LIMIT
SAN FRANCISCO GOLF CLUB
LAKE MERCED GOLF & COUNTRY CLUB
THORNTON STATE BEACH
DALY CITY
TO SANTA CRUZ
TO SAN BRUNO
TO SAN JOSE
OCEAN VIEW REC CENTER
CITY COLLEGE OF SAN FRANCISCO
Balboa Reservoir
MT. DAVIDSON PARK
GLEN CANYON PARK
CROCKER AMAZON PLAYGROUND
SLOAT BLVD
OCEAN AVE
JOHN DALY BLVD
GREAT HWY
SKYLINE BLVD
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FOR CONTINUATION SEE DALY CITY & VICINITY MAP

APPENDIX H

GREENCAR

- INVENTORY OF REPRESENTATIVE SCHEMES -

NAME GC13 Barac / Mwanza

LOCATION Urban - Milton Keynes

FOCUS Low cost travel ; co-ops / ecology

STATUS 1982 - Active

MEMBERSHIP 2 women from two households, now three women from 2 households, aged 35-50 with children. One woman is a teacher, one works in a bookshop.

VEHICLES VW Camper van (14 yrs old) until 1984 then asecond car added, Hillman imp car (13 yrs old)

TERMINAL AND SUPPORT FACILITIES Park at home, bicycle or lift or bus, between homes (2 miles).

PLANNED EXPANSION Inclusion of shared vehicle fleet in a 'self-build' village development in Milton Keynes.

AVAILABILITY

Hours originally weekend/ weekday split between households now one vehicle at each house. usage With one vehicle 6000/ annum with 2 vehicles and third (learner) driver not yet known.

RESERVATION by agreement to deviate from the basic weekend/weekday split.

METERING DEVICE dashboard notebook

PRICING 15p inclusive mileage charge for both cars which represents a conscious subsidy to VW use

FUNDING Self financed

COMMENTS Access to two vehicle types gives more flexibility than each owning either completely.

NAME	GC8 Harmony
LOCATION	Urban ; Oxford
FOCUS	Low cost travel ; holidays ; to sell books/food from the van
STATUS	1981 June - Active
MEMBERSHIP	8 people (as 4 couples) in 4 households
VEHICLES	VW Camper Van (9 years old, 60,000 miles)
TERMINAL AND SUPPORT FACILITIES	A bookshop used as a 'central place' to keep a calender to make bookings. One member was made treasurer.
PLANNED EXPANSION	A second scheme with ex-members is being attempted in a different part of Oxford.
AVAILABILITY	Hours 24 ; rules about how often the van may be booked by the same individual for weekends etc. usage 550 miles /month - 6600 / per annum.
RESERVATION	by calender at bookshop; no bookings shall exceed 8 days without prior consultation with group; bookings have to be made more than 48 hrs in advance.
METERING DEVICE	dashboard notebook
PRICING	Purchase price of vehicle, tax and insurance is shared equally between the 8 owners; petrol, all other costs repairs etc, are used to determine a mileage charge.
FUNDING	Self financing
COMMENTS	One member developed a computer program to bill the users and show the costs and use of the vehicle each month.

A RESIDENTIAL CHRISTIAN COMMUNITY:

TRANSPORT ARRANGEMENTS

The community has expanded rapidly over the past 7-8 years to some 650 people living in and around a village in southern England. This is a deep rural area with little public transport and the community was of necessity forced to develop its own transport facilities. Whereas the conventional solution to this problem is a high level of car ownership (with low levels of bus and poor mobility for those without good car access) it is evident that the community has adopted a highly efficient system some features of which appear to be generally applicable.

TRANSPORT NEEDS

Five categories of transport need were identified.

(1) the need to get to religious meetings; these may be local or quite far afield;
(2) the need to get to work and to get to school;
(3) the need to obtain provisions for the household;
(4) individual trips, e.g. personal and family trips;
(5) journeys made as part of one of the business enterprises of the community.

The transport needs are certainly lessened by living in a community in which some of the trips are co-ordinated e.g. the attendance at religious meetings, and by the fact of several families living in the same large household. By eating communally and by having some degree of autonomy of food production and distribution again the number of 'shopping' trips can be minimised. The community has its own farm(s?), bakery and chain of 6 food and bread shops. The life-style is one which is not consumer orientated and this also cuts down the number of shopping trips.

INFRASTRUCTURE

The basic living unit of the community are large houses. The house visited had 18 adults and 7 children. The main aim of those providing transport was that a seat would be available per member such that all the community could move at the same time. This supply of 'seats' is achieved using minibuses and cars. In the particular house visited one 15 seater minibus and two cars provided the basic seat capacity.

The main item of infrastructure apart from the minibuses and cars is a garage staffed by 5 full time workers. Four of the workers engage in general maintenance and repairs while one is a sprayer and coach builder. One regular task is to convert Ford transit vans to minibuses by putting in windows and seats. The vans are purchased second hand generally from one industrial user. Thus some ease of maintenance is gained by keeping a single vehicle type.

Cars are also bought second hand (to avoid pride of ownership and I suspect for financial reasons too) and the decision to sell off or re-purchase vehicles is made on the advice of the garage staff.

Diesel vehicles are preferred (cars and vans) as the garage has two large tanks for diesel fuel. This fuel is also used by the haulage firm and the farm (and the shops) which form part of the businesses of the community. The haulage firm has 5-6 lorries one of which (at least) is a bulk grain transporter.

Cycle and walk were not developed as modes of transport and not perceived as such, apparently. However, the amount of walking that does go on may not be fully recognised. A recent fatal accident in the community involving a motorcycle has led to them being phased out. It was also expressed that being a solo vehicle it was not easy to 'have fellowship' on a motorbike as compared to the minibuses or cars.

ORGANISATION

Each household has a transport deacon responsible for the co-ordination and supply of transport to meet the needs of that household. Each vehicle is allocated to a particular person who is responsible for daily maintenance checks on oil and water with a weekly check on the battery, tyres, brake and clutch fluids.

Over the community as a whole one Brother is responsible for the allocation of minibuses and another for the allocation of cars. If a need arises which cannot be met from within the single large household then the transport deacon can summon up assistance from other households in the community. This appear to be one of the main jobs of the deacon.

There are three other elements of transport organisation.

(1) Regular minibus services link the houses in the community to the local town, these operate to a timetable.
(2) Use of village as an interchange between cars, minibuses and for transfer to works bus (in at least one case). The important factor here is that car sharers transfer from one car to another.
(3) The change of work times so as to fit in with other travellers and so to combine trips. This may entail considerable inconvenience for certain members but is not apparently resented.

GENERALITY/UNIQUENESS OF THE SYSTEM

There are many aspects of the community which are not directly applicable to the secular society outside. But even in this context the community may indicate a limiting case of what is possible given almost exceptional good will of the participants. The standard of mobility appears to be very high and achieved at very low cost and with high vehicle occupancy. Perhaps the single most important 'mechanism' which the community has come up with in order to meet its needs is the use of an intermediate staging point (or points) where car sharers can change cars. This undoubtedly requires a degree of organisation which may not be practical elsewhere. Conversely at some point demand could be treated as random and cars filled/emptied at staging points generating some kind of fare-based hitch-hiking system.

One item of difference is the low transport demand of women inside the society compared to outside with the latter having much higher 'demand' for travel.

This community may well serve as a model for other intentional communities such as Greentown in Milton Keynes, or rural self-help schemes.

NAME GC9 Cheshire

LOCATION Rural ; village, Hertfordshire

FOCUS Second car shared by wives

STATUS 1976 - Active

MEMBERSHIP 2 married women living next door to each other

VEHICLES single vehicle

TERMINAL AND SUPPORT FACILITIES parked at home

PLANNED EXPANSION none

AVAILABILITY

Hours 24 usage 4000 miles per annum

RESERVATION They established a general pattern of priorties; there was only overlap on wanting the car at the same time once a fortnight, this was generally not difficult to reschedule.

METERING DEVICE dashboard notebook

PRICING petrol in proportion to distance all other costs halved

FUNDING self financed

COMMENTS One member had an accident in the car - she then paid all the repair costs and a greater proportion of the insurance bills to compensate for loss of no claims bonus.

NAME	GC - SVF 1
LOCATION	Rural - South East England
FOCUS	Low cost transport for Christian community
STATUS	1977 - Active
MEMBERSHIP	Large households (eg 18 adults 7 children) as basic unit ; 650 people in total network.
VEHICLES	One 15 seat minibus plus two cars for household visited
TERMINAL AND SUPPORT FACILITIES	Cars and minibuses can be summoned from other houses in the community when required; one individual is responsible in each household for the co-ordination of transport (a responsibility conducted outside normal working hours). A garage with coach building facilities and 5 full time staff and deisel fuel tank form the main support facility. A well developed car sharing system with interchange is a key feature. Overall responsibility for minibus and for car allocation is taken separately by two 'transport deacons'.
PLANNED EXPANSION	Scheme is at full development but will expand if the group membership increases.
AVAILABILITY	Hours 24hrs Usage not known
RESERVATION	via household transport supervisors
METERING DEVICE	none
PRICING	free
FUNDING	self financed by pooled incomes and businesses run by the community
COMMENTS	This scheme may indicate a limiting case of what is possible in a shared transport system. For further details see attached notes. The community has very many minibuses (40 ?) and a large number of cars but details are not known.

NAME GC17 Meara/Thomas

LOCATION Urban ; Milton keynes ; two households living 3 miles apart

FOCUS Shared maintenance responsibility ; low cost travel / environmental awareness ; work journeys for one individual, non-work journeys for the others ; both men work at the same place

STATUS 1982 - Active

MEMBERSHIP Professional households ; one married couple (early thirties) with the wife at home with children 10, 7; the other a single male in his fifties.

VEHICLES Ford Escort estate (1300cc) 8 years old when scheme started and 103,000 miles gone.

TERMINAL AND SUPPORT FACILITIES Parked at home ; car often exchanged at work

PLANNED EXPANSION none

AVAILABILITY

Hours 24hrs
Usage 11,350 miles per annum

RESERVATION verbal

METERING DEVICE notebook

PRICING inclusive mileage charge

FUNDING self-financed

COMMENTS Both households had a vehicle each before agreeing to share one between both of them. Charging for car use by a mileage charge was seen to encourage the use of rail for longer trips and bike/ walk for short trips. They have sometimes charged other people for lifts whereas they did not before entering the scheme.

NAME	GC2 Fender
LOCATION	Suburban ; London ; households in adjacent streets
FOCUS	Reliable travel for holidays abroad ; normally used for non-work journeys eg shopping and off-peak. Wives are the main users.
STATUS	1975 - 1979
MEMBERSHIP	Two professional famillies each with small children
VEHICLES	Citroen ami estate (600 cc) bought new for scheme.
TERMINAL AND SUPPORT FACILITIES	Parked at home ; Transit for journey to work
PLANNED EXPANSION	none
AVAILABILITY	Hours 24hrs Usage 6500 miles per year
RESERVATION	notebook in car
METERING DEVICE	notebook in car
PRICING	halve costs other than petrol ; petrol paid in proportion to mileage
FUNDING	self financed
COMMENTS	They expected to use taxis and hire cars when the car was not available but this did not happen ; rescheduling a trip was the most likely outcome.

NAME	GC1 Alder/Davies
LOCATION	Rural ; Milton Keynes ; households within 50 yards
FOCUS	Shopping and leisure trips; occasional use for work
STATUS	1977 - 1979
MEMBERSHIP	Began as two professional couples in late twenties; one member of each couple left during the period.
VEHICLES	998cc Austin minivan ; 2 seater quarter ton load van with rear doors suitable for carrying bicycles in rear. 60,000 miles gone when van bought.
TERMINAL AND SUPPORT FACILITIES	Parked at home; minimum attribute vehicles in this scheme could be considered as bicycles (each member owned and used a bicycle).
PLANNED EXPANSION	One male who left the scheme initiated a further scheme where he moved to.
AVAILABILITY	Hours 24hrs Usage 9400 miles per year
RESERVATION	by verbal agreement
METERING DEVICE	notebook in car
PRICING	an all inclusive mileage charge including fixed costs but not replacement of vehicle.
FUNDING	self financed; bank account opened for car, monthly settlement of accounts and withdrawl for repairs etc as required
COMMENTS	Long distance travel tended to made by train where possible and this was a direct consequence of the price structure of travel in this scheme. A similar influence extended to short trips and work trips which were short enough to be made by bike; van trips were limited to the range 6-60 miles or trips at night or with loads eg shopping.

NAME GC5 (Bronwyn)

LOCATION Urban and Rural ; Aylesbury, Buckinghamshire

FOCUS Low cost travel / interest in Ecology

STATUS 1978 - 1980 (20 months)

MEMBERSHIP 4 individuals from 4 different households plus 3-4 occaisional users (called minor owners)

VEHICLES Triumph herald estate (small shooting brake)

TERMINAL AND SUPPORT FACILITIES

households of members were half to 3/4 mile apart except for one girl who lived 2 miles away in a near by village. The need for a 'central place' where bookings could be made emerged. This was moved from the garage where the car was often kept to the food shop where three of members worked. A calender used at the central place to make advanced bookings; booking became important to ensure use as food shop workers also wished to use the car on an occaisonal basis. A second vehicle, the VW van, was based at the shop and used either for transporting large things, large groups of people or when the shared car was immobile.

PLANNED EXPANSION None but 'next time' they will buy a newer vehicle.

AVAILABILITY

Hours 24 hours usage 10,000 miles / annum

RESERVATION see above

METERING DEVICE notebook in car

PRICING All costs (other than vehicle purchase) levied as a mileage charge; 8p per mile on car, 15p per mile on the VW. This price differential was very effective at reducing the private use of the VW which was seen primarily as a business vehicle. Occasional users were required to buy a £1 share in the car plus travel at 10p per mile. Work done repairing the car is valued at £2 per hour.

FUNDING Car was self-financed by the group; the VW was run on the business.

COMMENTS Users of the car / van believed that the 'fares' charged for trips (at 10p/mile etc) were high while the scheme was probably loss making; joint owners knew the charges to be fare but where possible used transit for long trips and bikes/ walk for short trips. One unidentified user incurred a parking fine which had to be paid by the group; one member defrauded the others of £20 for vehicle license; the old car require two new clutches while in use in the scheme and was sometimes out of action for mechanical reasons. Non-payers are suspended from car use.

NAME GC6 Alder/Jones

LOCATION Urban ; Milton Keynes, 24 household housing co-operative

FOCUS Low cost personal travel and energy conservation

STATUS 1979 - 1981

MEMBERSHIP 4 (2 m, 2 f) individuals from 4 households

VEHICLES Austin minivan (2-seater plus 1/4 ton load) and Austin mini ; both vehicles were 10 years old

TERMINAL AND SUPPORT FACILITIES Parked in common car park for the 24 houses

PLANNED EXPANSION New scheme under consideration by one ex-member

AVAILABILITY

Hours 24
usage not known

RESERVATION by diary in cars and verbally

METERING DEVICE Dashboard notebook

PRICING Tax, Insurance and depreciation were allocated on a time basis which worked out at 2.5 pence per hour plus 4.5 pence per mile including petrol and engine wear and tear. £5 plus mileage charge if someone took car away for a week eg on holiday. Thetime the car is not used during a week is costed and shared equally between the four owners.

FUNDING Self-financed only

COMMENTS The scheme gained insurance in the business name of "Rainbow car co-op"; this covered the two cars and any persons given permission to drive by the group.

NAME	GC7 Wood / Cole
LOCATION	Rural - village in Cambridgeshire
FOCUS	Low cost travel and energy conservation
STATUS	1980 - 3
MEMBERSHIP	Two single parents living nearby
VEHICLES	Vauxhall viva estate (old - 90,000 miles +)
TERMINAL AND SUPPORT FACILITIES	Regularly garaged at one house
PLANNED EXPANSION	continuation by informal joint use of one woman's company car
AVAILABILITY	
Hours 24	usage not known
RESERVATION	by telephone and using calender in the car
METERING DEVICE	dashboard notebook
PRICING	a single mileage charge which includes an amount for the capital cost of the car. Thus the car is owned and paid for in proportion to the distance travelled in it by the two parties. On sale of vehicle the proceeds of sale will go to each in proportion to miles travelled. (The used the method outlined in the Green Car Guide).
FUNDING	the car is used in course of work by one woman for which there is a mileage allowance paid to her by the employer. Other-wise self financing.
COMMENTS	They got an insurance policy with both names on the head. The scheme ended because one member received a company car but they continued to use this in an informally 'shared' way.

NAME GC3 McBride

LOCATION Suburban ; Milton Keynes ; households 1.5 miles apart

FOCUS Van bought for business use to run a part-time photographic company. Used for personal travel when available but business use had priority. Not essential for journey to work.

STATUS Operational for 7 months during 1977 and ended when one member left the area for another job. Both individuals then bought their own cars.

MEMBERSHIP Two single males aged 24

VEHICLES Renault 4 van ; a 2-seater quarter ton load van.

TERMINAL AND SUPPORT FACILITIES parked at home and bike to reach van if parked at the other's home. Poor local transit although rail connections quite good; one member had the occaisional use of a friends car which could be important at weekends when business and social uses clashed.

PLANNED EXPANSION none

AVAILABILITY

Hours 24hrs subject to business as first priority
Usage 7000 miles per annum (55% business, 45% private)

RESERVATION Verbal at workplace

METERING DEVICE notebook in car to record business / personal mileage.

PRICING Business paid all fixed costs ; petrol costs on personal trips were paid by the individual.

FUNDING Tax benefits through owning the vehicle and paying fixed costs via the business ; otherwise self financed.

COMMENTS The bikes fitted inside the van

NAME	GC4 Kibblewhite/Thorgood
LOCATION	Rural - village 5 miles from Winchester 50 yards between homes of participants
FOCUS	Low cost travel and a belief in co-ops/ecology Used by one person for journey to work but by others for leisure journeys
STATUS	1978 - 1979 (7 months)
MEMBERSHIP	Two couples ages 37 - 48, one with 3 teenage children. Occupations are self employed craft workers of various types.
VEHICLES	15 year old Morris Minor Traveller (small shooting brake)
TERMINAL AND SUPPORT FACILITIES	Parking at home; One other car each but these were not mechanically operational until the end of the shared car scheme. Bus available at infrequent times to Winchester plus school bus. Bicycles used extensively by one familly.
PLANNED EXPANSION	in 1981 attempted to set up a larger shared vehicle scheme but without success. One familly keen to share car again; the other prefers own car if money available.
AVAILABILITY	Hours 24hrs but constrained by journey to work Usage 4200 miles/year
RESERVATION	Verbal and by habitual use patterns
METERING DEVICE	Dashboard log book using approximate distance since car odometer broken
PRICING	Fixed costs were halved; petrol paid in proportion to distance travelled; time spent repairing the car was recorded although the value of this time was not formally agreed on. If person A spoilt person B's insurance no claims bonus A agreed to recompense B.
FUNDING	the cost of car travel off-set against income tax for self employed.
COMMENTS	The 'prime movers' of the scheme had been involved in two previous shared vehicle schemes and had positive views of them. In the present scheme 90% of trips were to the local town of Winchester.

NAME	GC 10 (Tangram)
LOCATION	Urban - Leeds
FOCUS	Community activities / co-ops
STATUS	Jan 1980 - at least 1 year
MEMBERSHIP	Initially 2 then 3 persons
VEHICLES	Volvo estate
TERMINAL AND SUPPORT FACILITIES	Unknown
PLANNED EXPANSION	Ford Transit van to be added to the scheme
AVAILABILITY	
Hours 24	usage not known
RESERVATION	not known
METERING DEVICE	dashboard notebook initially ; now no formal system.
PRICING	Initially shared bills plus mileage charge, now, a flat rate per week (£5/week) plus an amount for fuel used.
FUNDING	some costs recouped from delivery work, otherwise self financed.
COMMENTS	Any surplus or deficit when the scheme is closed will be allocated to the members in proportion to the time that they have been in the scheme.

NAME	GC 11 Otty/Taubman
LOCATION	Urban - Bristol
FOCUS	Second car used by wives
STATUS	1974 - 1980 terminated by one woman requiring a car to get to work.
MEMBERSHIP	The two wives , both had children ; husbands were polytechnic lecturers.
VEHICLES	1968 Morris minor 1000 cc.
TERMINAL AND SUPPORT FACILITIES	Parked at home
PLANNED EXPANSION	An invitiation to other street members to, say, share 4 cars between 9 famillies using meters was not successful. It is not clear how determinedly this was pushed but a survey (1 week travel diary) in the street car use had been made one year previously with cooperation of 10 households. This showed that in 10 households with 11 cars never was more than 8 in use at one time and minor adjustments could reduced this to 6 or 7.
AVAILABILITY	
Hours 24	usage 9000 miles per annum
RESERVATION	verbally
METERING DEVICE	dashboard notebook
PRICING	Petrol in proportion to mileage and other costs halved
FUNDING	Self-financed
COMMENTS	Very few occasions when car needed at the same time by both individuals

NAME	GC 12 Philips/Lowe
LOCATION	Milton Keynes
FOCUS	Low cost non-work travel for one familly; low cost work travel for the other Woman sharing.
STATUS	1977-1979 Scheme terminated with end of the woman sharer's job.
MEMBERSHIP	One familly (in late twenties early thirties) with two children sharing with one woman in late twenties; professionals. The single woman lives five miles from the familly during three days of the week and 160 miles for the other four when the car is not used.
VEHICLES	Vauxhall viva estate (1974)
TERMINAL AND SUPPORT FACILITIES	The workplace functioned as 'central place' for arrangements concerning the car.
PLANNED EXPANSION	none
AVAILABILITY	
	Hours 4days one group, 3 days the other usage unknown
RESERVATION	only required if 3 day / 4 day split needed adjustment for particular occaisions; telephone used for this.
METERING DEVICE	a notebook to record mileage was replace by an informal system of returning the car with the same quantity of fuel as it began with.
PRICING	25% of capital cost of vehicle and of all bills paid for by the woman sharer. Petrol used is replaced by her.
FUNDING	Self-financed
COMMENTS	The scheme was initiated by the long distance commuting woman (by advert at work) who didnot want to buy a car for her work trip when she had the use of a car when at home in Derbyshire. The couple faced selling the car as an alternative to sharing.

NAME GC 14 Thorpe

LOCATION Urban - Cambridge

FOCUS Low cost travel ; co-ops / ecology

STATUS 1981 - 1984 ; terminated when car failed annual government test.

MEMBERSHIP three households; one single man, one single woman and a couple with a baby. All the adults in the 23 - 30 age range. Low income workers at the same co-op food shop.

VEHICLES Ford Cortina 15 yr old

TERMINAL AND SUPPORT FACILITIES the workplace (the shop) forms a focus or central place. 2 vans avialable at the shop at 20p and 12p per mile.

PLANNED EXPANSION split into two separate sharing groups and restart.

AVAILABILITY

Hours 24 usage unknown

RESERVATION diary kept in car and via shop

METERING DEVICE dashboard notebook

PRICING At first all bills were divided by 4 and petrol replace so that the tank was a quarter full; then this "very approximate" system was replaced by charging 10 pence a mile inclusive of repair bills and fixed charges

FUNDING Self-financed

COMMENTS One member (the single male) has bought a van which he needs for his new job fitting home insulation. The other two households have succeeded in borrowing vehicles in the short term. The two single persons expect to share ownership again, eg of the van mentioned here.

NAME GC 15 Oliver/wood

LOCATION Urban : Milton Keynes

FOCUS Student low cost car use

STATUS 1977 for at least one year

MEMBERSHIP 2 single males (26) in shared-rental house

VEHICLES Vauxhall viva van (998 cc) 5 years old

TERMINAL AND SUPPORT FACILITIES parked at home

PLANNED EXPANSION none

AVAILABILITY

- hours 24, but used by one sharer for work trip each day
- usage 150 miles/ week (8000 per annum)

RESERVATION verbal

METERING DEVICE notebook

PRICING 10p inclusive mileage charge

FUNDING self-financed

COMMENTS This is only really unsuccessful scheme of the green cars surveyed. Reasons given were that cost of using the car by A at 10p per mile were perceived as very high for the daily 17 mile work round trip. A did not buy into the ownership of the vehicle which was supplied by B and would revert to B after the close of the scheme; B didnot want joint ownership but was quite willing to let his car be used. However this caused conflict when repairs were needed as A felt he had already contributed to repair costs within the mileage charge. The price structure was effective in encouraging A to use bike for short trips; B had to use bike during the day because the van was unavailable. The van was unavailable '4 times in 6 months' when B wanted it. Solved by retiming trip. B perceived public transport as equally expensive as the van and that it took longer, so was not a viable substitute. A's motive for entering the scheme was to be able to get to work in a new job when he had not capital. Once in the job he saved up enough money to buy an old car for himself. B had sole use of the van before the scheme started.

The fact that A did not share the ownership (ie that B had in effect given temporary ownership to A for free) adversely affected the scheme and gave B too much power in determining the scheme structure. Thus the pricing structure was wrong for A's interest.

NAME	GC 16
LOCATION	Urban : Sheffield
FOCUS	Religious household
STATUS	1977 for at least one year
MEMBERSHIP	7 persons (4 m 3 f) plus other occasional users aged 20 -30
VEHICLES	Fiat 128 estate and Jawa 350 cc motorbike both formally pooled and financed from household funds. Three other motorbikes available in the household and two bicycles (see chart attached)
TERMINAL AND SUPPORT FACILITIES	A garage and workshop are used to store and maintain the vehicles at the house.
PLANNED EXPANSION	unknown
AVAILABILITY	
hours	24
usage	see chart
RESERVATION	unknown
METERING DEVICE	unknown
PRICING	the car is free in the sense that it is run and maintained out of the household pool of money or 'kitty'.
FUNDING	self financed
COMMENTS	Sheffield is a hilly district and bikes and small engined motorbikes are not suitable. Public transport is good in the area. "Free and available car parking is very difficult to find in the city area, but there are free designated areas for motorcycles in useful (if not obvious) positions all over the centre". Note that the women do not drive the motorcycles.

NAME GC18 Warm

LOCATION Suburban ; Milton Keynes

FOCUS business opportunity and low cost travel

STATUS 1981 six months trial

MEMBERSHIP Main owner and other occasional users

VEHICLES Ford Transit van (15 cwt payload) old and converted to use propane gas as fuel

TERMINAL AND SUPPORT FACILITIES parked at home

PLANNED EXPANSION none

AVAILABILITY

Hours 24hrs
Usage not known

RESERVATION verbal

METERING DEVICE paydrive meter (4 keys)

PRICING Inclusive mileage charge

FUNDING Business financed and Open University finance to supply meter.

COMMENTS The meter was used in three distinct ways; to allocate costs to particular jobs involving the use of the van and so bill customers accurately; to charge other people for hire of the van; to instruct himself of the cost of personal travel.

NAME	GC19 Lowerental
LOCATION	rural ; Swaffam , a Norfolk village
FOCUS	Car Rental Company supplies cars to user groups; mainly non-work travel for workers, housewives and the elderly.
STATUS	1978 abortive launch
MEMBERSHIP	none - applicants were too few and lived too distant
VEHICLES	Austin mini (998cc) and Ford escort (1100cc)

TERMINAL AND SUPPORT FACILITIES User groups of 2 to 4 households were to assemble and rent a car fitted with the paydrive meter. This car would then be parked at one or any of the households. Membership of the British Automobile Association (has breakdown service)

PLANNED EXPANSION new meter developed and location sought is urban or suburban for future tests.

AVAILABILITY

Hours 24hrs
Usage zero

RESERVATION method to be agreed amoung users

METERING DEVICE 4-key Paydrive meter

PRICING minimum rental period of 6 weeks. Weekly fixed charge, mileage charge and a refundable deposit. Users were responsible amoung themselves to pay for petrol in proportion to mileage done.

FUNDING Business financed and Open university financed the paydrive meter

COMMENTS Journey lengths are high in deep rural areas which lead to high perceived costs and a belief that the car rental company was charging too highly (whereas they were offering cars ata loss initially). Population density being low also presents great problems for the household based scheme proposed here. Thus we conclude that some other location (shop, church, garage) may be a suitable base in such areas while higher density areas should be sought for rental company applications to household use of such cars.

The scheme leaflet is attached.

APPENDIX I

SURVEY OF POTENTIAL SVF CLUB MEMBERS

- Preliminary Questionnaire Content -

SURVEY OF POTENTIAL SVF ENTERPRISE MEMBERS

- Preliminary Questionnaire Content -

DEMOGRAPHICS	- Member age/sex (family life cycle) - Driver licence/employment status	
RESIDENCE	- Residence type and past frequency of moving	
VEHICLE OWNERSHIP	- Number/type/age/current mileage - Expected "renewal" date and type	
TRAVEL PATTERNS & MODE CHOICE	- Work (& college/university) locations and distance - Shopping locations: groceries/other - Recreation: weekend local/cottage/vacation - Social/personal business - Flexibilities in the above (eg. due to work hours) - Vehicle occupancy	
SHARED VEHICLE FLEET	- Initial reaction (based on pamphlet and interviewer's presentation) - Desirable attributes - vehicle type(s) - on board equipment - new/2-year old used - Price threshold for considering/agreeing to join an enterprise	
POSSIBLE SVF USAGE	- Frequency - Day and time - Purpose - Distance	. with personal fleet as is . with one less own vehicle (if conceivable)
ENERGY PERCEPTIONS	- Transportation price consciousness: perceived usage cost vs. total usage cost - Share of household budget - Own criteria for vehicle purchase (factors & relative weights) - Recent changes: modal shift/less trips/more efficient car/...	